AN EXPERIMENTAL EXAMINATION OF BINGE EATING DISORDER STIGMA

by

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Abstract

Background: Individuals with Binge Eating Disorder (BED) report feeling blamed, shamed, and misunderstood, but existing research on the public stigmatization of BED is limited and lacking methodological rigor. At present, vignette studies designed to examine BED stigma have two critical limitations: (1) they lack the necessary control vignettes to accurately assess the nature and magnitude of BED stigma; and (2) characters in BED vignettes are nearly always described as having a larger body, introducing the potential confound of weight stigma. For these reasons, the true nature of public stigma associated with BED is unclear. The current vignette study was designed to examine public stigma associated with BED while controlling for the effect of the vignette character's body size. **Method:** Participants ($N = 421$) were randomly assigned to read one of six vignettes describing a young woman with either BED or no BED, as well as either no mention of her weight, a recommended weight, or an obese weight. Participants then completed four questionnaires to examine stigma in terms of personality characteristics they ascribed to the character, their anticipated emotional reactions upon interacting with the character, their desired social distance from the character, and the extent to which they blame the character for her condition. **Results:** The character with BED was ascribed more negative personality characteristics and faced less positive emotional reactions than the character without BED, regardless of her weight status. However, participants' desire for social distance from the character did not depend on whether or not she had BED. Additionally, an unexpected finding emerged where the character was blamed *less* when she had BED and obesity compared to when she had obesity alone. **Conclusions:** BED is a highly stigmatized eating disorder, and stigma may have help-seeking implications for targeted individuals. Clinical and public policy implications are discussed, along with recommendations for future research.

General Summary

In this thesis, I explore public stigma associated with Binge Eating Disorder (BED). I begin by defining stigma as an intersectional concept, which means that the degree of stigma faced by an individual reflects all of the marginalized attributes that they possess. I then transition into a discussion of BED stigma, where I emphasize that BED stigma often intersects with weight stigma. My study was motivated by existing literature on BED stigma, which has not addressed the impact of weight stigma. To this aim, I designed an experiment to examine how members of the public stigmatize a fictional character who was described as having either BED or no eating disorder and having either a large body or a thin body. The results of my study revealed that BED is a highly stigmatized mental health disorder, regardless of the character's body size. Specifically, I found that BED stigma is characterized by stereotypes of character (e.g., that person is lazy) and by negative emotional reactions (e.g., feeling uncomfortable around a person with BED). My results also revealed that BED stigma is not related to a desire to distance oneself from people with BED nor does it seem to trigger overt blaming (e.g., that person is to blame for their binge eating). I conclude my thesis with an in-depth discussion of all my findings, implications for clinical work and public policy, and recommendations for future research.

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List of Abbreviations

Analysis of Covariance	ANCOVA
Analysis of Variance	ANOVA
Anorexia Nervosa	AN
American Psychiatric Association	APA
Affective Reactions Scale	ARS
Blame Attribution Scale	BAS
Binge Eating Disorder	BED
Balanced Inventory of Desirable Responding	BIDR
Body Mass Index	BMI
Bulimia Nervosa	BN
Characteristics Scale	CS
Diagnostic and Statistical Manual of Mental Disorders, 5th Edition	DSM-5
Framework Integrating Normative Influences on Stigma	FINIS
Impression Management	IM
International Classification of Diseases, 11th Revision	ICD-11
Mean	M
Mental Illness Stigma Framework	MISF
No Binge Eating Disorder	NBED
No Mention of Weight	NMW
Obese	OB
Orthorexia Nervosa	ON
Recommended Weight	RW
Self-Deceptive Enhancement	SDE
Social Distance Scale	SDS
Standard Deviation	SD
World Health Organization	WHO

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An Experimental Examination of Binge Eating Disorder Stigma

Stigma occurs when an individual with one or more socially devalued or marginalized attributes experiences rejection from others (Goffman, 1963; Michaels, López, Rüsch, & Corrigan, 2012; Pescosolido, 2015). Public stigma may present as stereotypical beliefs, negative emotional reactions (i.e., prejudice), and/or acts of discrimination directed toward members of a marginalized group (Fox, Earnshaw, Taverna, & Vogt, 2018; Link & Phelan, 2001; Michaels et al., 2012). Related to public stigma, self-stigma may occur when an individual from a marginalized group internalizes negative attitudes perpetuated against them by others (Michaels et al., 2012). One central characteristic of stigma is *intersectionality*, which means that the stigma targeting any one individual will vary as a function of the socially devalued attributes they are ascribed (Cole, 2009; Fox et al., 2018). For example, an individual with a mental health disorder will face stigma attached to the label of that disorder, but the degree of stigma this individual will face also depends on additional marginalized attributes that they may possess, which can be in the form of a gender identity, sexual orientation, race, ethnicity, culture, class, ability status, or appearance feature. For this reason, the concept of intersectionality means that two individuals with the same mental health disorder in the same society may have very different experiences of stigma.

A substantial body of research has examined the stigmatization of mental health disorders (e.g., Parcesepe & Cabassa, 2013) and an important subsection of this literature recognizes eating disorders as highly stigmatized conditions (Griffiths, Mond, Murray, & Touyz, 2015; O'Connor, McNamara, O'Hara, McNicholas, & McNicholas, 2019). Research that examines eating disorder stigma may seek to examine stigma from the perspective of affected individuals (i.e., experienced stigma, self-stigma) or from the perspective of everyone else (i.e., public

stigma). Within the literature on public stigma, the vast majority of studies focus on restrictive forms of disordered eating (e.g., symptoms of Anorexia Nervosa [AN] and Bulimia Nervosa [BN]), while very few studies focus on Binge Eating Disorder (BED). BED stigma is an important area of examination not only because literature on BED lacking, but because many people who face BED stigma must also contend with weight stigma. This is due to the fact that a majority of individuals with BED are categorized as overweight or obese (Grucza, Przybeck, & Cloninger, 2007; Kessler et al., 2013; Mustelin, Bulik, Kaprio, & Keski-Rahkonen, 2017). In this way, BED stigma may often intersect with weight stigma.

Examining the intersection of BED stigma and weight stigma is relevant for expanding current understandings of both eating disorder stigma and weight stigma. At present, research on BED stigma is limited and lacks theoretical and methodological rigor. In particular, no study to date has examined BED stigma while considering concurrent weight stigma. The primary objective of the current thesis was to examine the nature of BED stigma while controlling for the effect of body size, and as a consequence, this thesis also examines the nature of weight stigma while controlling for the effect of binge eating behaviour. As a secondary objective, this study was designed to explore the intersection of stigmas associated with BED and obesity. Lastly, this study was designed to address several methodological limitations found in previous studies on the stigmatization of BED.

1.1 Conceptualizing Stigma

Erving Goffman's (1963) book, "Stigma: Notes on the Management of Spoiled Identity" was pivotal in conceptualizing stigma as a psychosocial phenomenon. Goffman (1963) laid the necessary foundation for viewing stigma as an intersectional construct by describing three types of stigma: (1) 'blemishes of individual character' (e.g., a mental health disorder); (2)

'abominations of the body' (e.g., a physical disability); and (3) 'tribal stigma' (e.g., a minority ethnicity). While it was not Goffman's intention to highlight the intersectional nature of stigma, this categorization of 'stigma types' underscores the fact that many individuals with mental health disorders also possess other stigmatized attributes. In recent years, modern theoretical perspectives on mental health disorder stigma have expanded upon the notion that stigma is an intersectional construct.

1.1.1 Framework Integrating Normative Influences on Stigma

Pescosolido, Martin, Lang, and Olafsdottir (2008) developed a framework to explain how mental health disorder stigma develops and maintains over time due to interactions between micro-, meso-, and macro-level factors. This framework, referred to as the Framework Integrating Normative Influences on Stigma (FINIS), posits that stigma occurs when an individual's status does not align with societal expectations or norms. These societal norms are determined by macro- and meso-level factors such as cultural beliefs, political systems, media influences, and healthcare practices; while micro-level factors such as characteristics of the mental health disorder (i.e., illness characteristics) and characteristics of the stigmatized individual (e.g., gender, age, race, ethnicity, social class) interact to create the perception that some individuals are 'others' within a society.

The FINIS model takes a holistic approach to conceptualizing mental health disorder stigma, with the overarching theme that stigma results from the complex interplay of many individual and societal factors. FINIS demonstrates the intersectional nature of stigma by highlighting that stigma faced by an individual will reflect the extent to which they are perceived to hold a devalued status within a society. Put simply, an individual with multiple devalued

attributes will, on average, face greater stigma than an individual with only one of these attributes.

While FINIS describes how intersectionality influences the development of stigma, it does not describe how intersectionality influences experiences of stigma. To complement this, Fox and colleagues (2018) proposed the Mental Illness Stigma Framework, where they applied intersectionality theory to explain how individuals experience and are impacted by stigma.

1.1.2 Mental Illness Stigma Framework

The Mental Illness Stigma Framework (MISF) defines stigma through two primary perspectives: (1) the perspective of the general public and (2) the perspective of stigmatized group members (Fox et al. 2018; also see Michaels et al., 2012). From here, stigma is described from each perspective using 'mechanisms' to explain how stigma is expressed and experienced.

Stigma from the perspective of members of the public (i.e., public stigma) includes *cognitive*, *affective*, and *behavioural* mechanisms. The cognitive mechanism refers to stereotypical beliefs held by members of the public about members of a stigmatized group; the affective mechanism refers to prejudice, or negative emotional reactions directed toward members of a stigmatized group; and the behavioural mechanism refers to discriminatory actions perpetuated against members of a stigmatized group. According to MISF, these three mechanisms interact to yield public stigma. For example, a person may hold the belief that someone with a mental health disorder is dangerous (a stereotype), which may elicit fear of the individual (prejudice), which may lead to social distancing from the individual (discrimination).

The second perspective used in MISF to define stigma is the perspective of stigmatized group members. Here, stigma is conceptualized using the mechanisms of *experienced stigma*, *anticipated stigma*, and *internalized stigma*. Experienced stigma refers to negative interactions

described from the perspective of affected individuals (e.g., microaggressions); anticipated stigma refers to the extent to which an individual expects that they will be the target of stigma; and internalized stigma refers to the integration of negative attitudes and beliefs into one's self-perception (Fox et al. 2018; Michaels et al., 2012). Using these perspectives and mechanisms, MISF highlights the intersectional nature of stigma by emphasizing the role of the unique characteristics of both members of society and stigmatized group members. For example, an individual may face greater stigma if they have multiple marginalized attributes, but the stigma they experience will also depend on the extent to which their society endorses stereotypes, prejudice, and discrimination against those attributes. Additionally, the stigma experienced by any individual will depend on the way that individual perceives, anticipates, and internalizes stereotypes, prejudice, and acts of discrimination.

FINIS describes how stigma develops as a social construct, while MISF describes how stigma is perpetuated and experienced within a society. Taken together, FINIS and MISF conceptualize the origins, nature, and continuance of stigma, while recognizing stigma as an intersectional construct. Together, the concepts used within these frameworks can be applied in research on the stigmatization of mental health disorders. In the current thesis, these frameworks were applied to examine the intersection of BED stigma and weight stigma.

1.2 Binge Eating Disorder

Binge eating refers to episodes of eating during which an individual consumes an abnormally large amount of food, in a discrete period of time, while experiencing a sense of loss of control over what and how much they are eating (American Psychiatric Association [APA], 2013; World Health Organization [WHO], 2019). Within the context of binge eating, 'a sense of loss of control' can be characterized as a strong compulsion to begin eating followed by an

inability to stop eating. During episodes of binge eating individuals typically consume highly palatable and calorically dense foods that are high in sugar, fat, and salt (Carter, Kenny, & Davis, 2019).

Episodes of binge eating may involve eating in the absence of physical hunger and/or eating beyond the point of physical discomfort, eating much more rapidly than normal, and eating in secrecy due to feelings of embarrassment (APA, 2013). Although episodes of binge eating may initially prompt feelings of calmness or relief, individuals often experience feelings of disgust and guilt following a binge eating episode. In the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) and in the International Classification of Diseases, 11th revision (ICD-11), BED may be diagnosed when an individual experiences binge eating episodes at least once per week for several months (e.g., three months) but does not attempt to compensate for the food they consume using 'inappropriate' means (e.g., fasting, excessively exercising, self-induced vomiting).

BED has only recently been recognized as a mental health disorder by the American Psychiatric Association (2013) and the World Health Organization (2018). For this reason, there is less research on BED than there is on eating disorders such as AN and BN. Regarding BED stigma, information can be gathered from two limited areas of research: (1) qualitative studies where information on BED stigma is gathered from members of the targeted group; and (2) vignette experiments where information on BED stigma is gathered from members of the public.

1.3 Qualitative Studies on Binge Eating Stigma

O'Connor and colleagues (2019) recently published a systematic review of 29 studies on experiences of stigma reported by individuals with eating disorders. The results of this review showcase that individuals with disordered eating experience stigma from strangers, family

members, and healthcare providers. Several studies included in this review found that individuals with disordered eating often feel reluctant to seek help due to a fear of facing stigma (Becker, Arrindell, Perloe, Fay, & Striegel-Moore, 2010; Evans et al., 2011; Hepworth & Paxton, 2007). Regarding BED in particular, findings are limited and preliminary. While most of the studies included in this review address a range of eating disorder subtypes, none of the studies explicitly focused on BED. However, some findings suggest that different eating disorder subtypes are associated with unique experiences of stigma. For example, in a study by Ison and Kent (2010), one participant expressed the belief that eating disorders with binge eating symptomology (e.g., BN) are less socially accepted than other eating disorders, as expressed in their statement, "I think people who hear about people with bulimia just think that they're greedy pigs… I don't think there's as much compassion for [individuals with BN] as there is for [individuals with AN]" (available from Ison & Kent, 2010). While this information does not pertain to BED specifically, the primary distinction between BN and AN is the presence of binge eating behaviour in BN. For this reason, this statement conveys the belief that binge eating is associated with stereotypes about greed and a lack of self-control.

Expanding upon the findings summarized by O'Connor et al. (2019), a qualitative analysis conducted by Evans (2016) illustrated that individuals with DSM-5 diagnosed BED experience stigma from the media, friends and family, and healthcare providers. Interview transcripts from this study revealed that individuals with BED felt blamed for their eating disorder, ashamed of their binge eating, a desire to keep their binge eating secret, and misunderstood by others. As stated by one participant, "You go to the doctors and they would say 'it is what goes into your mouth that causes the problem, simple'. [So] you kind of think, 'well, yeah, I know if I cut down what I am eating I will lose weight'… [but] they weren't

understanding that I had no control… I felt stupid." (available from Evans, 2016). Statements such as this typify stigma experienced by individuals with binge eating difficulties, with a pertinent theme of feeling blamed for not controlling their eating behaviour, leading to feelings of shame.

These findings on personal experiences of BED stigma highlight a need for research that quantifies public BED stigma (i.e., stereotypes, prejudice, and discrimination perpetuated by members of the public). Research studies designed to assess the public stigma of eating disorders typically employ vignette-survey designs. In these designs, participants read a paragraph describing a character with disordered eating and then answer questions to assess stigma they direct toward that character. Many of these vignette studies focus exclusively on AN and/or BN (e.g., Angermeyer et al., 2013; Geerling & Saunders, 2015; Mond, Robertson-Smith, & Vetere, 2006; Roehrig & McLean 2010; Stewart, Schiavo, Herzog, & Franko, 2008; Wingfield, Kelly, Serdar, Shivy, & Mazzeo, 2011), and no study has focused exclusively on public stigma associated with BED. However, several vignette studies on eating disorder stigma have included BED vignettes in addition to AN and BN vignettes, providing some insight into the nature of public stigma targeting individuals with BED.

1.4 Eating Disorder Stigma Experiments with BED Vignettes

Table 1 summarizes vignette studies that examined binge eating stigma or BED stigma as a primary objective or as a complement to assessing mental health literacy for BED.[1] The majority of these studies were designed to compare BED stigma to stigma associated with other forms of disordered eating, and several studies also included vignettes that describe a character who has obesity but no eating disorder. Additionally, some of these studies included vignettes

[1]Additional studies that included binge eating or BED vignettes that did not examine dimensions of stigma were not included in Table 1.

describing characters with other mental or physical health conditions (e.g., Major Depressive Disorder, Type 1 Diabetes). Preliminary results from these studies help characterize some of the basic features of BED stigma, which will be discussed next.

1.4.1 Preliminary Findings on BED Public Stigma

Across eating disorder stigma vignette studies, results suggest that BED stigma is largely characterized by beliefs about self-discipline and personal control. For example, Ebneter, Latner, and O'Brien (2011) found that stigma targeting a character with BED correlated positively with the belief that the character lacked self-discipline, and Ebneter and Latner (2013) found that a character with BED was attributed a greater lack of self-discipline and blamed more for their condition than characters with AN, BN, or Depression. In both of these studies the sample consisted of undergraduate psychology students in the United States. Two years later, Stokes (2015) replicated the finding that a character with BED is blamed more than characters with AN or BN using a sample of clinical psychology doctoral students. Shortly after, Anderson, Gratwick-Sarll, Bentley, Harrison, and Mond (2016) reported that adolescents in Australia held the belief that BED symptomology is more attributable to a lack of will power/self-control than BN symptomology. Similarly, O'Connor and colleagues (2016) found that adolescents in Ireland were more likely to associate 'self-control problems' with BED (40.6%) compared to BN (4.2%) or AN (1.9%), and in the same study the character with BED was rated as having significantly more personal control over her disorder than characters with Depression or Type 1 Diabetes.

Beyond comparisons of BED to AN and BN, Simpson and Mazzeo (2017) found that undergraduate students believed a character with BED could 'pull themselves together if they wanted to' more than a character with Orthorexia Nervosa (ON), a form of disordered eating characterized by an unhealthy obsession with consuming foods that are deemed 'clean' and

'pure'. This finding suggests that the participants viewed the character with BED as more personally responsible for her eating disorder than the character with ON. Additionally, the authors found that having self-discipline was associated with AN and ON more than BED. Lastly, the authors found that students attributed AN and ON to biological causes more than BED. Given that biological causes (e.g., genetics) are beyond anyone's control, this finding further reinforces the misconception that BED is associated with a perceived lack of personal control than other eating disorders. In sum, much of the evidence from vignette studies supports the idea that BED stigma is characterized by the stereotype that individuals with BED lack self-control. In contrast to these findings, McNicholas, O'Connor, O'Hara, and McNamara (2016) found that perceptions about personal controllability did not differ across vignettes that described an adolescent character as having BED, AN, BN, Depression, or Type 1 Diabetes. However, the participant sample in that study consisted of healthcare professionals (i.e., psychiatrists, psychologists, counsellors, and general practitioners) who, compared to students, may have greater knowledge pertaining to disordered eating etiology.

In addition to beliefs about self-discipline and personal control, findings from vignette studies point to other dimensions of stigma that differ across eating disorder subtypes. For example, Anderson et al. (2016) found that BED symptomology was perceived to be less severe than BN symptomology while Ebneter and Latner (2013) found that BED was associated with less impairment and distrust than AN or BN. Additionally, Murakami, Essayli, and Latner (2016) found that characters with restrictive eating behaviour were rated as less attractive (AN and BN), judged more negatively (BN), and elicited greater proximal discomfort (BN) than a character with BED. Relatedly, Simpson and Mazzeo (2017) found that characters with AN and ON were perceived to be more difficult to talk to and more dangerous than a character with BED, and they

also found that AN was associated with attention-seeking more than BED. These findings suggest that different dimensions of stigma can emerge as more or less relevant depending on the nature of the eating disorder in question. Taken together, these studies demonstrate that BED stigma is largely characterized by the belief that individuals with BED lack self-discipline and are at fault for their condition, while stigma associated with restrictive forms of disordered eating is characterized by a wider range of stereotypes (e.g., they are impaired, they should not be trusted, they are seeking attention).

While most studies suggest that BED stigma is centred on self-discipline and personal control, it is still possible that other stereotypes, prejudices, and acts of discrimination contribute to BED stigma. For example, Star, Hay, Quirk, and Mond (2015) found that Australians were more likely to believe that a person with BED would face discrimination (66%) compared to a person with AN (48%) or BN (35%). Additionally, O'Connor and colleagues (2016) found that adolescents were less likely to ascribe positive personality traits to a character with BED compared to a character with AN. Furthermore, some studies have found no differences across eating disorder subtypes on certain dimensions of stigma (e.g., beliefs about equal rights, perceived psychopathology, negative emotional reactions; Murakami et al., 2016; O'Connor et al., 2016), suggesting that some forms of stigma may equally target individuals with different eating disorder subtypes.

The results of these vignette studies provide a basis for characterizing the stigmatization of different eating disorders, including BED. However, there are some methodological concerns that may qualify the results of these studies that should be discussed.

1.4.2 Methodological Concerns in Experiments with BED Vignettes

There are two key methodological concerns in vignette stigma studies that may influence findings on BED stigma: (1) the absence of appropriate 'healthy control' vignette conditions; (2) failure to control for the vignette characters' body size.

1.4.2.i Absence of 'Healthy Control' Conditions. While previous studies help compare and contrast stigma across eating disorder subtypes, it is difficult to identify the true nature of BED stigma without comparing BED cases to healthy control cases (e.g., a character with no eating pathology or any other condition). In a dissertation study by Stokes (2015), some participants were exposed to a vignette in which the character had no eating pathology and fell within a recommended weight range. However, the measure used to examine stigma in that study (the Eating Disorder Stigma Scale; Stewart, Keel, & Schiavo, 2006) was designed to examine stigma associated with AN, and the questions were not appropriate for reference to a vignette character without eating pathology (e.g., participants cannot respond to the statement, '[name] is to blame for their condition' when there is no 'condition' present in the vignette). Due to this methodological oversight, the 'healthy control' vignette in this study was not a valid control condition. In fact, mean stigma scores targeting the healthy character in this study exceeded stigma scores for characters with BN and BED (Stokes, 2015), suggesting that the results are not valid. Aside from Stokes (2015), no other study has employed a healthy control vignette when examining BED stigma. Several studies have included comparison vignettes in which a character has another mental health disorder (e.g., Depression; Ebneter & Latner, 2013) or a physical health disorder (e.g., Type 1 Diabetes; McNicholas et al., 2016). However, these vignettes do not allow researchers to determine the magnitude of BED stigma, which can only be determined by comparing a character with BED to a character with no mental or physical health conditions.

1.4.2.ii Weight Stigma as a Confound. Another methodological limitation in eating disorder stigma vignette studies relates to weight stigma. It is not possible to accurately characterize BED stigma unless the possibility of weight stigma has been accounted for. Across the majority of studies with BED vignettes, characters with BED are described as having larger bodies. Across studies, descriptions of body size in BED vignettes include 'slightly overweight' (Anderson et al., 2016), 'overweight' (Simpson & Mazzeo, 2017), 'obese' (Cain et al., 2017; Ebneter et al., 2011) and 'severely obese' (Ebneter & Latner, 2013; O'Connor et al., 2016; McNicholas et al., 2016; Mond & Hay, 2008; Star et al., 2015; Stokes, 2015). The inclusion of these weight descriptors in BED vignettes represents a significant design flaw because it is impossible to separate attitudes toward BED from attitudes toward larger bodies. Research has shown that individuals in larger bodies are stigmatized as unintelligent, unattractive, lazy, unhappy, self-indulgent, lacking self-discipline, and at-fault for their weight status (De Brún, McCarthy, McKenzie, & McGloin, 2014; Pont, Puhl, Cook, & Slusser, 2017; Puhl & Brownell, 2003; Puhl & Heuer, 2009). Notably, these findings from the weight stigma literature are similar to preliminary findings on BED stigma, where individuals are blamed and shamed for their condition. The possibility that weight stigma confounds BED stigma is further supported by the results of a study by Star and colleagues (2015) where 84% of participants who believed that a character with BED symptomology would face discrimination attributed this belief to the fact that she also had a larger body, not because she engaged in binge eating. As such, vignettes that describe a character as having BED and a larger body cannot accurately assess stigma associated with BED.

Murakami and colleagues (2016) recognized that weight stigma was a confound when studying BED stigma and excluded mentioning weight from their BED vignette. However, not

mentioning weight in a vignette does not fully control participants' assumptions about a character's weight. For example, participants may assume that a character with BED has a larger body as a result of the character's eating behaviour, even if the character's weight is not mentioned. This seems possible due to the misconception that BED and having a larger body invariably co-occur. While it is true that a majority of individuals with BED fall within an overweight or obese weight category (Grucza et al., 2007; Kessler et al., 2013; See also Mustelin et al., 2017), approximately one-third of individuals with BED fall within the recommended weight range. For these reasons, it is essential that vignettes describing BED deliberately control the character's body size to prevent weight stigma from confounding assessments of BED stigma.

1.4.3 Findings on the Intersection of BED Stigma and Weight Stigma

While the inclusion of obesity as a character descriptor in BED vignettes makes it difficult to draw reliable conclusions about BED stigma, many of these experiments also include a vignette describing a character with obesity and no binge eating behaviour. From these studies, preliminary inferences may be drawn about the intersection of BED stigma and weight stigma.

To begin, Bannon, Hunter-Reel, Wilson, and Karlin (2009) found that a character with BED symptomology and obesity was blamed more for her condition, elicited greater social distancing, and was viewed as less attractive than a character with obesity alone. Similarly, Ebneter and Latner (2013) found that a character with BED and obesity was rated as more impaired and distrustful than a character with obesity alone. These findings speak to the possibility that concurrent BED and obesity interact to yield greater negative attitudes and acts of discrimination than obesity alone. In contrast, Stokes (2015) reported greater stigma associated with obesity alone compared to concurrent BED and obesity, and Ebneter and Latner (2013)

found that a vignette character with BED and obesity was blamed *less* than a character with obesity alone. Lastly, Cain and colleagues (2017) found that healthcare professionals in Australia were less likely to endorse weight bias when a vignette character had concurrent BED and obesity compared to obesity alone. While these findings suggest that the presence of binge eating does influence the stigma associated with having a larger body, the inconsistency of findings across studies indicate that more research is required to fully distinguish and explore the intersectionality of BED stigma and weight stigma.

1.5 The Current Study

To date, published studies that have examined BED stigma have not appropriately distinguished BED stigma from weight stigma. As a result, it is not clear how BED elicits stigma when a vignette character does not have a larger body. Likewise, it is not clear how BED stigma compares to weight stigma, or if these attributes intersect to yield stigma that is greater than the stigma uniquely associated with each attribute.

Intersectionality theories of stigma suggest that individuals will face stigma to the extent that they possess multiple marginalized attributes (e.g., Pescosolido et al., 2008). In line with this, some scholars have suggested that individuals with concurrent binge eating and larger bodies are particularly vulnerable to stigma due to the aversiveness of binge eating in addition to weight stigma (Mond & Hay, 2008). It is possible that stigma associated with concurrent BED and obesity is greater than BED stigma or weight stigma alone. While some findings support the possibility that the presence of binge eating increases stigma imposed upon individuals with obesity (e.g., Bannon et al., 2009), other findings suggest that it is the presence of obesity that drives the stigma targeting vignette characters with BED (e.g., Star et al., 2015). However, no

study to date has examined BED stigma independently of weight stigma and no study has accurately examined the intersection of BED and weight stigma.

The current vignette study was designed to examine BED stigma while controlling for character body size and to explore the intersectionality of stigma associated with the presence of concurrent BED and obesity. An experimental design involving six vignette conditions was used. By extricating descriptions of binge eating behaviour and body size across multiple vignettes, this study represents the first attempt to compare BED stigma to weight stigma and the first exploration of the intersectional stigma associated with these related, but distinct, attributes.

1.5.1 Objectives and Hypotheses

1.5.1.i Objective 1. The first objective of the current study was to examine the nature of BED stigma when the target character was described as falling within the recommended weight range (i.e., when weight is controlled). It was hypothesized that the vignette character with BED would face greater stigma in terms of stereotypes, prejudice, and discrimination compared to the vignette character without BED.

1.5.1.ii Objective 2. The second objective was to examine the nature of weight stigma when the target character was described as having healthy eating behaviours (i.e., when binge eating behaviour is controlled). It was hypothesized that the vignette character with obesity would face greater stigma in terms of stereotypes, prejudice, and discrimination compared to vignette characters described as falling within the recommended weight range or with no mention of weight. Given that both BED and obesity are marginalized attributes that attract stigma, no specific hypotheses were made regarding the similarities and differences between stigma dimensions associated with BED versus obesity.

1.5.1.iii Objective 3. In order to explore the potential intersection of BED stigma and weight stigma, the third objective was to compare BED stigma when the vignette character was described as having a recommended weight to when the character was described as having an obese weight. It was hypothesized that the presence of concurrent BED and obesity would elicit the greatest degree of stigma (compared to all other vignettes) in terms of stereotypes, prejudice, and discrimination.

1.5.1.iv Objective 4. Given the fact that BED and obesity often cooccur, the fourth objective was to examine participants' assumptions about body size associated with the presence of BED. In this study, the manipulation of weight status in the vignettes included three conditions: no mention of weight, recommended weight, and obese. For vignettes in which there was no mention of weight, it was hypothesized that participants would be more likely to assume that the character was obese when she had BED compared to when she did not have BED. In line with this hypothesis, it was anticipated that participants would stigmatize the characters with no mention of weight and the characters with obesity to a similar extent when BED was present.

1.5.1.v Objective 5. Based on previous findings suggesting that personal control is a key component of BED stigma, the fifth objective was to examine blame imposed upon the vignette character when she had BED and/or a larger body. Blame attribution can be viewed as a reflection of personal controllability beliefs (e.g., this person should be able to control their eating, but they don't, so they are to blame for their size). It was hypothesized that the vignette character would face greater attributions of blame when she had BED compared to when she did not have BED and when she had obesity compared to when she had a recommended weight.

In addition to the five primary objectives stated above, the current study was designed to improve upon previous vignette stigma studies by: (1) increasing the uniformity of character

descriptions across vignette conditions (with the exception of the intended manipulations); and (2) including two control vignettes in order to better characterize the magnitude of stigma imposed upon characters with BED and/or obesity.

2.0 Method

2.1 Design

A 2 × 3 between-participants vignette-survey design was employed. Each of six conditions was represented by a vignette describing a female character with two varying attributes: BED status (BED versus no BED) and weight status (no mention of weight versus recommended weight versus obese). Three questionnaires were used to assess the stigmatization of the vignette character across three dimensions: (1) personality characteristics ascribed to the character (stereotypes); (2) anticipated emotional reactions in response to interacting with the character (prejudice); and (3) desired social distance from the character (discrimination). Additionally, a measure was used to assess attributions of blame imposed upon the character for her condition, as blame/personal control is a particularly relevant form of stigma for binge eating and body size (e.g., Bannon et al., 2009; Ebneter & Latner, 2013; Evans et al., 2016). Participants were also asked four manipulation check questions to examine their retention of the manipulated information in the vignette (i.e., the character's BED status and weight status). Additionally, these manipulation check questions served to examine participants' assumptions about body size linked to BED as well as their assumptions about eating behaviour linked to the presence of a larger body. Participants also completed a questionnaire to assess their tendency to exhibit social desirability response bias to determine if this form of bias correlated with responses on either of the four stigma scales. Lastly, participants completed demographic

questions, including questions to examine certain variables that may influence stigmatizing responses (e.g., previous eating disorder diagnosis).

2.2 Participants

Four hundred and fifty-four participants were recruited from the community via advertisements posted on social media websites (e.g., Facebook) and flyers throughout St. John's, NL, CA. Participants were excluded from analyses if they were under the age of 18 (n = 2), spent less than seven seconds on the screen containing the vignette (n = 25), or if they did not complete at least one of the four stigma scales in the survey (n = 6)[2]. Of 421 participants remaining, 79.8% identified as female, 18.6% identified as male, and 1.2% identified as another gender. The mean age of the sample was 32.7 years (Range: 19-80 years) and the mean body mass index (BMI) was 28.15 kg/m[2] (Range: 15.59 to 65.23 kg/m[2]). The vast majority of the sample identified as Caucasian (94.2%), followed by Indigenous (3.8%), and other ethnicities (1.9%). The majority reported their relationship status as married or in a relationship (65.1%), followed by single (30.1%), divorced or separated (4.2%), and widowed (0.6%). More than half of the sample reported holding full-time employment (56.1%) followed by part-time employment (22.4%), no current employment, (9.3%), retired (6.4%), unable to work (3.5%), and working as an unpaid homemaker or caregiver (2.2%). Across the sample, 40.6% of participants indicated being a full- or part-time student.

Participants were also asked to indicate their history and experiences with disordered eating. Of those who reported having personal experience with disordered eating, 6.4% indicated having been previously diagnosed with an eating disorder and 16.1% reported that they believed themselves to have an eating disorder. In addition, 14.1% indicated having an immediate family

[2]Completion was defined as responding to all items or all but one item (later imputed) on either the CS, ARS, SDS, or BAS.

member who had been previously diagnosed with an eating disorder and 12.2% reported that they speculated that one of their immediate family members had an eating disorder. Across the full sample, 22.8% also indicated that they had experience working with individuals with eating disorders (i.e., interacting with individuals with eating disorders outside of social gatherings, such in a treatment or volunteer setting).

2.3 Materials

2.3.1 Vignettes

The vignettes used in the current study were created with reference to best practice recommendations for constructing vignettes in experimental research (Aguinis & Bradley, 2014; Huges & Huby, 2004). First, vignettes from previous studies were reviewed for relevancy to BED stigma (refer to Table 1 for a summary of these studies). Phrases from previous vignettes were retained if they were considered relevant and representative of BED while distracting or inaccurate details were removed (e.g., mention of behaviours not characteristic of BED, such as repetitive dieting). In the vignettes, BED was described using diagnostic criteria outlined in the DSM-5 (APA, 2013). Specifically, the character was described as experiencing a loss of control over her eating, eating in the absence of physical hunger, eating beyond the point of physical discomfort, experiencing disgust and guilt following a binge eating episode, and not engaging in any compensatory behaviours to counteract a binge episode. Foods used to describe the binge episode in the BED vignettes were also modified from previous studies to correspond with foods commonly consumed during binge eating episodes among individuals in Newfoundland, CA (based on client experiences reported in clinical practice; J. Carter, personal communication, 2020). Additionally, obesity was described using the World Health Organization (2018) cut-off BMI score of 30 or higher. Given that BMI is a crude unit of measurement of body fat

percentage, a BMI of 41.8 was used in the vignettes to ensure that participants would imagine the character as having a high body fat percentage (as opposed to a high muscle mass, for example). The content in all six vignettes were vetted by a social psychologist and two clinical psychologists (one who specializes in the treatment of eating disorders).

The final six vignettes each described a 19-year old woman named Sarah. Three vignettes described Sarah as having binge eating symptomology and state that she has been diagnosed with BED: one with no mention of her weight (BED/NMW), one in which she is described as falling within the recommended weight range (BED/RW), and one in which she is described as obese (BED/OB). Three additional vignettes described Sarah as having normal eating habits as well as no psychiatric or physical illnesses: one with no mention of her weight (NBED/NMW), one in which she is described as falling within the recommended weight range (NBED/RW), and one in which she is described as obese (NBED/OB). The two vignettes describing Sarah with no BED and either no mention of weight or recommended weight served as control conditions. All six vignettes were worded identically with the exception of the intended manipulations (i.e., BED status and weight status). A detailed description of how the vignettes were created can be found in the Appendix A and the six vignettes can be found in Appendix B.

2.3.2 Survey Questionnaires

2.3.2.i Characteristics Scale. The Characteristics Scale (CS; Penn et al., 1994) was used to assess negative and positive personality characteristics that participants ascribed to the vignette character (i.e., stereotypes). Participants are asked to rate the vignette character on 18 bipolar adjective pairs (e.g., *Strong–Weak*) using a 7-point scale (e.g., 1 = *Strong;* 4 = *Neutral*; 7 = *Weak*). For this scale, nine items are reverse scored and then individual item ratings are averaged to yield an overall score ranging from 1-7 where scores below the midpoint of 4

represent the attribution of positive characteristics (e.g., that the character is strong, open, trustworthy, intelligent) and scores above the midpoint represent the attribution of negative characteristics (e.g., that the character is weak, defensive, untrustworthy, unintelligent). The CS has been used in previous research to examine attitudes toward vignette characters with disordered eating (Nevin & Vartanian, 2017; Stewart et al., 2008; Yan et al., 2018) and has demonstrated good-to-excellent internal consistency reliability across studies (α range = 0.84 to 0.95; Nevin & Vartanian, 2017; Penn et al., 2004; Stewart et al., 2008; Yan et al., 2018).

In a study by Yan et al. (2018) on the stigma of AN, five additional adjective pairs were added to the CS to better reflect negative attitudes associated with AN, as indicated by previous studies on AN stigma. Given evidence suggesting that individuals with binge eating are often perceived as lacking self-discipline (Anderson et al., 2016; Ebneter & Latner, 2013; Ebneter et al., 2011; O'Connor et al., 2016) the adjective pairs *Disciplined—Careless* and *Lazy—Energetic* (reverse-scored) were added for the purposes of the current study (item-rest correlations for these pairs were 0.699 and 0.599, respectively). With the current sample, Cronbach's alpha for this scale was 0.906. One item on the scale, *Insensitive—Sensitive* (reverse scored), was found to correlate negatively with the other items on the scale, which may have resulted from the ambiguity of these words (i.e., both 'insensitive' and 'sensitive' can have negative connotations, depending on context). Due to the ambiguity of this adjective pair within the context of weight stigma, this item was removed, and Cronbach's alpha increased to 0.916. See Appendix C for a copy of the CS.

2.3.2.ii Affective Reactions Scale. The Affective Reactions Scale (ARS; Penn et al., 2004) was used to assess participants' anticipated emotional reactions upon interacting with the vignette character (i.e., prejudice). On this scale, participants are asked to imagine how they

would feel if they interacted with the vignette character and then indicate the extent to which they would feel certain emotions based on 10 bipolar adjective pairs (e.g., *Apprehensive—Comfortable*) using a 7-point scale (1 = *Apprehensive*; 4 = *Neutral*; 7 = *Comfortable*). Five items are reverse scored and then individual item ratings are averaged to yield a total score ranging from 1-7, where scores below the midpoint of 4 represent positive emotions (e.g., comfortable, optimistic, calm, patient) and scores above the midpoint represent negative emotions (e.g., apprehensive, pessimistic, nervous, irritable). The ARS has been used in previous research to examine attitudes toward vignette characters with disordered eating and obesity (Zwickert & Rieger, 2013) and has demonstrated good-to-excellent internal consistency reliability across studies (α range = 0.82 to 0.94; Nevin & Vartanian, 2017; Penn et al., 2004; Stewart, et al., 2008; Yan, et al., 2018; Zwickert & Rieger, 2013). With the current sample, Cronbach's alpha for this scale was 0.876. See Appendix D for a copy of the ARS.

2.3.2.iii Social Distance Scale. The Social Distance Scale (SDS; Bogardus, 1925; Link, Cullen, Frank, & Wozniak, 1987) was used to assess participants' desire for social distance from the vignette character (i.e., an act of discrimination). This scale consists of seven items (e.g., "How would you feel about introducing someone like Sarah to your friend group?") rated on a 4-point scale (*Definitely willing*, *Probably willing*, *Probably unwilling*, and *Definitely unwilling*; numbers are not included with the anchors). Responses are scored as 0, 1, 2, or 3, respectively, and then averaged to yield an overall score for each participant, where higher scores represent a greater desire to distance oneself from the vignette character in social settings. This scale has been used in previous research to examine attitudes toward vignette characters with a range of marginalized attributes including disordered eating and obesity (Zwickert & Rieger, 2013). The SDS has demonstrated good construct validity (Link, Yang, Phelan, & Collin, 2004) and

adequate-to-excellent internal consistency reliability across studies (α range = 0.75 to 0.92; Angermeyer et al., 2004; Lauber, Nordt, Falcato, & Rössler, 2004; Link et al., 1987; Nevin & Vartanian, 2017; Stewart et al., 2008; Penn et al. 1994; Yan, Rieger, & Shou, 2018; Zwickert & Rieger, 2013).

The original SDS was created over ninety years ago so it is not surprising that some of the items have become obsolete (e.g., "How would you feel about introducing [name] to a young woman you are friendly with?"). Furthermore, this scale was not designed for use in student populations and works under the assumption that all respondents have children (e.g., "How would you feel about having [name] be the caretaker of your children for a couple of hours?"). To accommodate research with undergraduate students, a modified version of the SDS has been used by Borenstein (2011) and Stahl (2017); but this version is not appropriate for use in working adults. Thus, to accommodate the SDS for use in a heterogeneous population of adults (i.e., adults who are attending post-secondary school and/or working), aspects from the student modified SDS were incorporated into the original SDS for use in the current study. For example, "How would you feel about working at the same job as someone like [name]?" was changed to, "How would you feel about being coworkers or classmates with someone like [name]?" With the current sample, Cronbach's alpha for this scale was 0.924. See Appendix E for a copy of the SDS.

2.3.2.iv Blame Attribution Scale. The Blame Attribution Scale (BAS) of the Universal Stigma Scale (Ebneter & Latner, 2013) was used to assess the degree to which participants blamed the vignette character for her condition. This scale consists of five items (e.g., "Sarah is to blame for her current condition") rated on a 5-point scale (1 = *Strongly disagree*; 2 = *Disagree*; 3 = *Neither agree or disagree*; 4 = *Agree*; 5 = *Strongly agree*). Scores are averaged to

yield an overall score ranging from 1-5 where higher scores indicate greater blame imposed upon the character. The scale developers, Ebneter and Latner (2013), found this scale to have adequate internal consistency reliability ($\alpha = 0.78$). With the current sample, Cronbach's alpha for this scale was 0.852. Participants assigned to one of the two control vignettes (i.e., NBED/NMW or NBED/RW) were provided an additional response option of *Not applicable* to prevent confusion when asked questions that referred to the vignette character as having a 'condition' or 'problem'. BAS scores for participants in either of the two control conditions were not included in the analyses. See Appendix F for a copy of the BAS.

2.3.2.v Balanced Inventory of Desirable Responding. The Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984, 1988) was used to assess the extent to which participants exhibit social desirability response bias (i.e., the tendency to respond to questions with socially acceptable answers). The BIDR consists of 40 items stated as propositions to which respondents indicate their agreeance with using a 7-point scale (1 = *Not true*; 4 = *Somewhat true*; 7 = *Very true*). This scale is divided into two 20-item subscales designed to assess Self-Deceptive Enhancement (SDE) and Impression Management (IM). SDE refers to a tendency to respond honestly but in a positively biased manner (e.g., responding to the item, "My first impressions of people usually turn out to be right" with *Very true*) and IM refers to a tendency to provide improbable responses in order to appear socially correct (e.g., responding to the item, "I have said something about a friend behind his or her back" with *Not true*). Ten items on each subscale are reverse scored and then each extreme response (i.e., 6 or 7) is scored as 1, with all non-extreme responses (i.e., 1-5) scored as 0. Points are then summed to yield a total subscale score ranging from 0-20 for each subscale, where higher scores indicate a higher degree of social desirability response bias. This scale has been found to be psychometrically sound across several

tests of validity and reliability and is considered to be an established measure of social desirability response bias (Paulhus, 1991; Perinelli & Gremigni, 2016). Within the current sample, Cronbach's alphas for the SDE and IM subscales were 0.750 and 0.769, respectively. See Appendix G for a copy of the BIDR.

2.3.2.vi Manipulation Check Questions. To assess how participants perceived and remembered the manipulated information presented in the vignettes, they were asked the following questions: (1) "Based on the information you read in the passage, to what extent does Sarah engage in binge eating?" Responses were given on a 5-point scale (1 = *Not at all*; 3 = *Somewhat*; 5 = *Very much*); (2) "Based on the information you read in the passage, to what extent does Sarah have control over her eating?" Responses were given on a 5-point scale (1 = *Not at all*; 3 = *Somewhat*; 5 = *Very much*); (3) "Based on the information you read in the passage, which of the following best describes Sarah's weight?" Responses were selected from on a 5-point scale (1 = *Underweight*; 3 = *Recommended weight*; 5 = *Obese*); and (4) "Based on the information you read in the passage, which of the following best describes Sarah's weight in pounds (lbs)?" Responses were selected from five weight categories (*100-129lbs*; *130-159lbs*; *160-189lbs*; *190-219lbs*; and *220-249lbs*). See Appendix H for a copy of the manipulation check questions.

2.3.2.vii Demographic Questionnaire. Participants were asked demographic questions to indicate their age, gender, relationship status, height, weight, ethnic background, highest level of education completed, student status, and employment status. Additionally, to assess prior experience with or exposure to eating disorders, participants were asked the following yes or no questions: (1) "Have you ever been diagnosed with an eating disorder by a healthcare professional?"; (2) "Are you aware of an immediate family member who has been diagnosed

with an eating disorder by a healthcare professional?"; and (3) Do you have experience working with individuals with eating disorders?" For each question related to self or family member eating disorder diagnosis, participants were given a third option to indicate if they believed that an eating disorder was present in the absence of a formal diagnosis. See Appendix I for a copy of the demographic questionnaire.

2.4 Procedure

The procedure for this study was approved by the Memorial University Interdisciplinary Committee on Ethics in Human Research (see Appendix J). Participants accessed an online Qualtrics survey by following a link to an informed consent form (see Appendix K). Participants' consent was implied when they clicked the 'Next' button on the survey following the consent form. All participants were randomly assigned to read one of the six vignettes (BED/NMW, BED/RW, BED/OB, NBED/NMW, NBED/RW, NBED/OB). Specific instructions informed participants that they would not be able to return to the vignette page after they moved beyond it within the survey. Following the vignette page, participants completed the four questionnaires to assess dimensions of stigma (i.e., the CS, ARS, SDS, and BAS), in random order, followed by the manipulation check questions, the BIDR, and demographic questionnaire. Lastly, participants were presented with a debriefing form including resources to local mental health supports (see Appendix L). Participants were also offered an opportunity to enter their email address into a draw for one of two $50 gift cards as compensation for their participation.

2.5 Statistical Analyses

All statistical analyses were conducted using Jamovi Version 1.1.9.0.

2.5.1 Data Cleaning and Scoring

The data were first cleaned to remove data from participants who did not meet the inclusion criteria (i.e., be at least 18 years of age, spend at least seven seconds on the vignette page, and complete at least one of the four primary dependent measures). Next, appropriate items on the CS, ARS, and BIDR were reverse scored. For participants missing one item on the CS, ARS, SDS, or BAS, that missing item was replaced by their series mean for that scale (Downey & King, 1998). Any participants missing one or two items on the BIDR had those items replaced in the same manner. Following this, participants' scores for each item on the CS, ARS, SDS, and BAS were averaged to yield the final dependent variables for these scales. For the BIDR, responses were scored using the method described by Paulhus (1991). In the first step, scores below 6 (i.e., 1-5) were recoded as 0 and scores above 5 (i.e., 6-7) were recoded as 1. Using these recoded variables, scores for items 1-20 were then summed to yield the final dependent variable for the SDE subscale and scores for items 21-40 were summed to yield the final dependent variable for the IM subscale. Respondents missing three or more items on the BIDR did not have a total calculated for that scale. Next, the distribution of scores on each of the CS, ARS, SDS, BAS[3], and BIDR were examined for departure from normality. All distributions were approximately normal except for scores on the SDS and CS, which exhibited marked skew and kurtosis. To adjust these distributions, scores on the SDS were raised by a power of 2 and scores on the CS were raised by a power of 1.5 before further analyses. These transformations were determined based on recommendations described by Howell (2013) to reduce skewness and kurtosis.

[3]Scores on the BAS were only examined for experimental vignettes and separated into two groups before analysis: (1) BED/OB and NBED/OB conditions; and (2) BED/NMW, BED/RW, BED/OB conditions.

2.5.2 Correlational Analyses

A correlation matrix was created to identify potential confounding variables that should be controlled for in the primary Analyses of Variance (ANOVAs). Four demographic variables (i.e., gender, BMI, eating disorder diagnosis, and experience working with individuals with eating disorders) were selected for inclusion on the basis of prior research indicating that attitudes toward individuals with disordered eating could vary with these characteristics (e.g., Bannon et al., 2009; Stokes, 2015; Vander Wal & Thelen, 1997). Additionally, both subscales on the BIDR (i.e., SDE and IM) were included to determine if social desirability response bias correlated with participants' responses on either the CS, ARS, SDS, or BAS. To prepare dichotomous variables for correlational analyses, they were coded in binary (i.e., gender, previous eating disorder diagnosis, and experience working with individuals with eating disorders). Pearson product-moment correlations were then calculated using gender (male versus female), eating disorder diagnosis (present versus absent), experience working with individuals with eating disorders (yes versus no), BMI, and scores on the SDS, ARS, BAS, and both BIDR subscales.

2.5.3 Primary Planned Analyses

To examine responses to the four manipulation check questions, a frequency analysis was conducted for each question and the percentages of participants who selected each response option were tabulated. Additionally, to examine whether the presence of BED influenced assumptions about the character's weight when weight was not mentioned in a vignette, a Chi Square test of independence was conducted to compare participants in the BED/NMW condition to participants in the NBED/NMW condition on their responses to the third manipulation check question (i.e., "Based on the information you read in the passage, which of the following best

describes Sarah's weight?" With response options including 1 = *Underweight*; 3 = *Recommended weight*; 5 = *Obese*).

Finally, three 2 (BED status) × 3 (weight status) ANOVAs were used to examine scores on the CS, ARS, and SDS across vignette conditions and two one-way ANOVAs were used to examine scores on the BAS (one examining the effect of BED status when obesity was present and one examining the effect of weight status when BED was present). *Post hoc* follow-up tests and simple main effects analyses were conducted for all significant main effects and interactions when a variable had more than two levels. In any case where pertinent demographic variables (identified in the correlation matrix) or scores on either of the BIDR subscales correlated with scores on one of the four dependent variables, the ANOVA was conducted a second time including those variables as covariates. The results of all Analyses of Covariance (ANCOVAs) are presented in Appendix M.

3.0 Results

3.1 Descriptive Statistics

3.1.1 Manipulation Check Questions

Figure 1 depicts responses to each of the four manipulation check questions across the six vignette conditions. For the weight status manipulation, the majority of participants in the OB conditions responded accurately for the character's weight category (76% selected *Obese*) and weight in pounds (91% selected *220-249 lbs*). In line with this, the majority of participants in the RW conditions responded accurately for the character's weight category (93% selected *Recommended weight*) and weight in pounds (89% selected *100-129 lbs*). For the BED status manipulation, the majority of participants in the BED conditions responded accurately for the extent to which the character engages in binge eating (82% selected *4* or *5 - Very much*) and the

extent to which she has control over her eating (65% selected *1 - Not at all* or *2*). In line with this, the majority of participants in the NBED conditions responded accurately for the extent to which the character engages in binge eating (76% selected *1- Not at all* or *2*) and the extent to which she has control over her eating (69% selected *4* or *5 - Very much*).

3.1.2 Primary Dependent Variables Measuring Stigma

Table 2 contains means and standard deviations for the CS, ARS, SDS, and BAS measures across each of the six vignette conditions. Across the six conditions, average scores on the CS ranged from 3.217 (i.e., slightly below the scale midpoint of 4) to 4.265 (i.e., slightly above the scale midpoint of 4) with a scale range of 1-7, meaning that personality characteristics ascribed to the vignette character were close to neutral across all conditions. On the ARS, average scores ranged from 2.793 to 3.90 (i.e., all averages fell below scale midpoint of 4) with a scale range of 1-7, indicating that participants' anticipated emotional reactions upon interacting with the character were slightly positive or close to neutral across all conditions. On the SDS, average scores across all six conditions ranged from 2.389 to 2.536 on a scale with four verbal anchors, indicating that participants' desire for social distance from the character was approximately neutral (i.e., the most commonly selected responses were the second option, *Probably unwilling*, and the third option, *Probably willing*). On the BAS, average scores ranged from 1.897 to 2.665 with a scale range of 1-5, indicating that blame imposed upon the vignette character when she had BED and/or obesity was minimal, with participants most often selecting the second response option, *Disagree*, and the third response option, *Neither agree or disagree*.

3.1.3 Social Desirability Bias

Table 2 contains means and standard deviations for the SDE and IM subscales on the BIDR across each of the six vignette conditions. Across the six conditions, average total scores

on the SDE subscale ranged from 3.818 to 5.220 and average total scores on the IM subscale ranged from 6.000 to 7.241. For these subscales scores can range from 1-20, but any score above 0 indicates some degree of social desirability response bias. On average, scores on the SDE subscale were low and scores on the IM subscale were low-to-moderate.

3.2 Correlational Analyses

Table 3 contains Pearson product-moment correlations between scores on the CS, ARS, SDS, BAS, and BIDR subscales with demographic variables including gender (male versus female), BMI, previous eating disorder diagnosis (present versus absent), and experience working with individuals with eating disorders (yes versus no). Correlations between either of the four primary dependent variables (CS, ARS, SDS, and BAS) and either of the BIDR subscales or any of the demographic variables were identified in order to control for social desirability response bias and demographic characteristics that may have influenced the results of the primary planned analyses. Here, it was determined that scores on the CS were negatively correlated with scores on the SDE subscale of the BIDR, scores on the ARS were negatively correlated with both scores on the SDE subscale of the BIDR and with experience working with individuals with eating disorders, scores on the SDS were positively correlated with being female, and scores on the BAS were negatively correlated with being female. These variables were controlled for using supplemental ANCOVA analyses presented in Appendix M.

3.3 Primary Planned Analyses

3.3.1 Chi Square Tests to Examine Assumptions about Weight Status tied to BED

As shown in Figure 1 (A) and (B), responses to the character's weight in the NMW conditions were more heterogeneous when she had BED versus when she did not have BED, suggesting that estimates of her body size were dependent on whether or not she had BED. To

examine assumptions about the character's body size tied to her BED status, a Chi Square test of independence was conducted to determine if participants' estimates of her weight category differed with her BED status. The results of this test revealed that estimates of the character's weight category in the NMW conditions did depend on her BED status, χ^2 (4, n = 104) = 49.890, p < .001, Cramer's V = 0.693. To specifically examine if participants assumed that a *larger* body was present when the character had BED, a *post hoc* follow-up Chi Square test of independence was conducted to compare participants who selected *1 - Underweight*, *2*, and *3 - Recommended Weight* to those who selected *4* and *5 - Obese*. This test revealed that participants in the NMW conditions were more likely to guess that she had a large body (i.e., select *4* or *5 - Obese*) when she had BED compared to when she did not have BED, χ^2 (1, n = 104) = 48.798, p < .001, OR = 36.270. Based on the finding that participants assumed the character had a larger body when BED was present, an additional exploratory Chi Square of independence was conducted to examine if participants made assumptions about the character's binge eating behaviour when she was described as having obesity. The test revealed that estimates about the character's binge eating behaviour in the NBED conditions did not depend on her body size, χ^2 (8, n = 153) = 9.986, p = 0.266, Cramer's V = 0.181.

3.3.2 Analysis of Variance Tests for Main Effects and Interactions

3.3.2.i Personality Characteristics. To examine the effects of BED status and weight status on personality characteristics ascribed to the vignette character, a 2 (BED status) × 3 (weight status) ANOVA was conducted using the transformed average score on the CS as the dependent variable (depicted in Figure 2). For this test, Levene's test for homogeneity of variances was significant, F (5, 330) = 6.248, p < .001. However, all group sizes were determined to be approximately equal because the ratio of largest to smallest group size was less

than 1.5 (64/43 = 1.488), indicating that this test and all subsequent *post hoc* analyses are robust to the violated homogeneity of variances assumption (Stevens, 2009, p. 227). The overall ANOVA revealed a significant main effect of BED status, F (1, 330) = 94.604, $p < .001$, $\eta^2 = 0.213$, a significant main effect of weight status, F (2, 330) = 5.04, $p = .007$, $\eta^2 = 0.023$, and a significant interaction, F (2, 330) = 4.901, $p = .008$, $\eta^2 = 0.022$. For the main effect of BED status, scores on the CS were significantly higher (i.e., less desirable personality traits) among participants in the BED conditions ($M = 4.209$, $SD = 0.487$) compared to participants in the NBED conditions ($M = 3.448$, $SD = 0.874$). *Post hoc* comparisons for the main effect of weight status indicated that scores on the CS among participants in the OB conditions ($M = 4.007$; $SD = 0.571$) were significantly higher (i.e., less desirable personality traits) than scores among participants in the RW conditions ($M = 3.738$; $SD = 0.774$), t (330) = 2.680, $p = .021$, of $d = 0.291$, and also higher than scores among participants in the NMW conditions ($M = 3.741$, $SD = 0.728$), t (330) = 2.724, $p = .019$, $d = 0.321$. The results of the main effects analyses for BED status and weight status suggest that both the presence of BED and the presence of a larger body increased participants' tendency to stereotype the character's personality. However, given that a significant interaction was also present, the results of the main effects must be further examined using simple main effects analyses before conclusions can be drawn. To this aim, *post hoc* ANOVAs were conducted to examine the simple main effect of BED status at each level of weight status and the simple main effect of weight status at each level of BED status[4]. For the first set of simple main effects analyses, it was determined that there was a significant effect of BED status upon comparing the two NMW conditions, F (1, 330) = 61.793, $p < .001$, $d = 1.387$, the two RW conditions, F (1, 330) = 26.457, $p < .001$, $d = 0.954$, and the two OB conditions, F

[4]Simple main effects F statistics were calculated by hand using the overall error term for maximum power.

(1, 300) = 14.420, $p < .001$, $d = 0.802$. In all three instances, participants rated the character as having less desirable personality traits when she had BED ($M_{NMW} = 4.265$; $M_{RW} = 4.126$; $M_{OB} = 4.236$) compared to when she did not ($M_{NMW} = 3.217$; $M_{RW} = 3.349$; $M_{OB} = 3.778$), suggesting that the presence of BED increased stereotypes associated with the character's personality. Next, two additional simple main effects analyses were conducted to examine the effect of weight status at each level of BED status. For this set of analyses, it was first determined that there was no significant effect of weight status when the character had BED, F (2, 171) = 1.282, $p = .280$, indicating that weight status did not impact stereotyping when the character engaged in binge eating. However, there was a significant effect of weight status when the character did not have BED, F (2, 159) = 6.415, $p = .002$, $\eta^2 = 0.075$. *Post hoc* comparisons for the effect of weight status when BED was absent revealed that scores on the CS among participants in the NBED/OB condition ($M = 3.778$, $SD = 0.674$) were significantly higher than scores among participants in the NBED/NMW condition ($M = 3.217$, $SD = 0.902$), t (159) = 3.463, $p = .002$, $d = 0.707$. Scores on the CS among participants in the NBED/OB condition did not significantly differ from scores among participants in the NBED/RW condition ($M = 3.349$, $SD = 1.047$), t (159) = 2.336, $p = .054$, $d = 0.466$, but the medium effect size suggests that this difference may have practical significance. The results of these analyses suggest that the presence of a larger body led to increased stereotyping of the vignette character, but only when she did not have BED.

To ensure that removal of the item *Insensitive—Sensitive* did not significantly change the results for the CS, the overall ANOVA was conducted a second time with the item included on the scale, and the results did not differ. Additionally, scores on the CS correlated negatively with SDE scores, so this test was conducted a second time using SDE scores as a covariate. The

results of this ANCOVA did not differ from the original ANOVA. See Appendix M for the results of this supplemental analysis.

3.3.2.ii Affective Reactions. To examine the effects of BED status and weight status on participants' anticipated emotional reactions upon interacting with the vignette character, a 2 (BED status) × 3 (weight status) ANOVA was conducted using average ARS score as the dependent variable (depicted in Figure 3). Levene's test for homogeneity of variances was not significant, F (5, 353) = 0.885, p = .491. The results of the ANOVA revealed a significant main effect of BED status, F (1, 353) = 10.920, p = .001, η^2 = 0.030, no main effect of weight status, F (2, 353) = 1.838, p = .161, η^2 = 0.010, and no interaction, F (2, 353) = 0.203, p = .816, η^2 = 0.001. For the main effect of BED status, scores on the ARS were significantly higher among participants in the BED conditions (M = 3.273, SD = 0.900) than participants in the NBED conditions (M = 2.939, SD = 0.988). This finding suggests that the presence of BED led participants to anticipate having less positive emotional reactions (i.e., greater prejudice) upon interacting with the vignette character.

Scores on the ARS correlated negatively with SDE scores and previous experience working with individuals with eating disorders, so this test was conducted a second time using SDE scores and experience as covariates. The results of this ANCOVA did not differ from the original ANOVA. See Appendix M for the results of this supplemental analysis.

3.3.2.iii Social Distance. To examine the effects of BED status and weight status on desired social distance from the vignette character, a 2 (BED status) × 3 (weight status) ANOVA was conducted using the transformed average score on the SDS as the dependent variable (as depicted in Figure 4). Levene's test for homogeneity of variances was not significant, F (5, 380) = 1.358, p = .239. The the results of the ANOVA revealed no main effect of BED status, F (1,

380) = 0.056, p = .0813, η^2 = 0.000, no main effect of weight status, F (2, 380) = 0.389, p = .678, η^2 = 0.002, and no interaction, F (2, 380) = 1.349, p = .261, η^2 = 0.007. These findings indicate that neither the presence of BED nor the presence of a larger body impacted participants' desire to socially distance themselves from the vignette character.

Scores on the SDS correlated positively with being female, so this test was conducted a second time using gender as a covariate. The results of this ANCOVA did not differ from the original ANOVA. See Appendix M for the results of this supplemental analysis.

3.3.2.iv Blame Attribution. To examine the effects of BED status and weight status on personal blame imposed upon the vignette character, two separate one-way ANOVAs were conducted using average BAS score as the dependent variable (as depicted in Figures 5 and 6). Two one-way ANOVAs were conducted instead of a single 2 (BED status) × 3 (weight status) ANOVA because the items on the BAS can only be applied to vignette characters that have a perceivable 'condition' (e.g., "Sarah is to blame for her current condition") or 'problem' (e.g., "Sarah's problem is not a real medical illness"). Thus, it was not appropriate to include the NBED/NMW and NBED/RW conditions in these analyses.

The first ANOVA was conducted using weight status as the independent variable to compare the three conditions that described the character as having BED (i.e., BED/NMW versus BED/RW versus BED/OB). Levene's test for homogeneity of variances was not significant, F (2, 188) = 0.432 p = .650. The results revealed no effect of weight status when the character had BED, F (2, 188) = 0.664, p = 0.516, η^2 = 0.007. This finding suggests that the presence of a larger body did not elicit greater blame from participants when the character engaged in binge eating.

The second ANOVA was conducted using BED status as the independent variable to compare the two conditions that described the character as obese (i.e., BED/OB versus NBED/OB). Levene's test for homogeneity of variances was not significant, F (1, 135) = 0.043, p = .835. As depicted in Figure 6, the results revealed a significant effect of BED status when the character was described as obese, F (1, 135) = 28.924, $p < .001$, $\eta^2 = 0.176$, where scores on the BAS were significantly higher among participants in the NBED/OB condition (M = 2.665, SD = 0.726) compared to participants in the BED/OB condition (M = 1.986, SD = 0.752). This finding suggests that participants blamed the character with obesity less when she also engaged in binge eating.

Scores on the BAS correlated positively with being male and negatively with having been previously diagnosed with an eating disorder, so these tests were conducted a second time using gender and eating disorder history as covariates. The results of these ANCOVAs did not differ from the original ANOVAs. See Appendix M for the results of these supplemental analyses.

4.0 Discussion

Eating disorders are highly stigmatized mental health disorders as evidenced by qualitative reports by individuals with AN, BN, and BED (Evans, 2016; O'Connor et al., 2019). While it is clear that individuals with disordered eating feel blamed, shamed, and misunderstood by family members, friends, healthcare providers and strangers, limited quantitative data exists to clearly characterize the nature and magnitude of stereotypes, prejudice, and discrimination targeting individuals with disordered eating. Of note, evidence to characterize the public stigmatization of BED is lacking in both quantity and methodological rigor.

Existing vignette studies that include BED vignettes have several limitations that threaten the validity of the results. Namely, these studies lack the appropriate 'healthy control' vignettes

that are required to quantify the magnitude of BED stigma and vignette characters with BED are nearly always described as being overweight or obese, making it impossible to distinguish whether stigmatizing responses are caused by the presence of BED or the presence of a larger body. With these limitations in mind, the current study was designed to examine the nature and magnitude of BED stigma while controlling for vignette character body size, to compare BED stigma to weight stigma, and to examine the potential intersection of BED stigma and weight stigma.

This study represents the first vignette experiment to characterize the nature and magnitude of public stigma targeting individuals with BED. Overall, the results revealed that BED is a highly stigmatized condition characterized by stereotypes and prejudice. Specifically, the results suggest that people make negative assumptions about the personalities of individuals with BED (i.e., they stereotype them) and anticipate having less positive emotional reactions upon interacting with individuals with BED compared to individuals without BED (i.e., they exhibit prejudice). Here, effect sizes indicated that the magnitude of BED stigma was considerably greater than the magnitude of weight stigma. In contrast to these findings, the results also revealed that people do not report a greater desire for social distance from individuals with BED compared to individuals without BED (i.e., a form of discrimination), and surprisingly, participants attributed *less* blame to the character with obesity when she also had BED.

Regarding the potential intersection of BED stigma and weight stigma, no evidence was found for an additive effect of BED status and weight status on stigma, suggesting that these conditions do not intersect to yield greater stigma than the stigma that is uniquely associated with each condition. However, the difference between the magnitude of BED stigma and the

magnitude of weight stigma found on the CS and ARS suggests that information about a person's eating behaviour presented in a vignette may be important to consider when interpreting findings from previous vignette studies on weight stigma. A detailed discussion for each of these findings is presented below.

4.1 Stereotyping and Prejudice Characterize BED Stigma

The first objective of this study was to examine the nature of BED stigma (i.e., stereotyping, prejudice, and discrimination) when weight status was controlled. As hypothesized, stigma emerged when the vignette character had BED on both the CS and ARS, regardless of the character's weight status. Here, participants were more likely to ascribe negative personality characteristics to the character and less likely to anticipate having positive emotional reactions around her when she had BED compared to when she did not. Notably, participants' scores on the CS surpassed the midpoint on the scale when the character had BED, indicating that they explicitly associated negative adjectives with having BED (e.g., weak, defensive, untrustworthy, careless, lazy) and positive adjectives with not having BED (e.g., strong, open, trustworthy, disciplined, energetic). These findings suggest that BED stigma is characterized by both stereotypes (i.e., making negative assumptions about a person with BED) and prejudice (i.e., experiencing negative emotions around a person with BED). These findings are particularly relevant for the literature on BED stigma because they represent a first look at BED stigma when weight status is appropriately controlled for across vignettes, meaning that the present results are the first to pertain exclusively to the public stigma of BED.

Regarding the outcome on the CS, the large effect sizes of BED at each level of weight status suggest that stereotyping is a particularly important component of BED stigma, where people with BED are presumed to have traits such as being weak, lazy, and careless. This finding

builds upon the results of a study by O'Connor and colleagues (2016) where a vignette character with BED was ascribed less positive personality traits than characters with AN or Depression. Regarding the results of the ARS, only one previous study examined prejudice as a dimension of eating disorder stigma and found that expressions of prejudice did not differ across eating disorder subtypes (O'Connor et al., 2016). However, that study did not control for weight status in the BED vignette and employed a sample of adolescent participants. The results of the current study suggest that prejudice in the form of unpleasant emotional reactions does characterize public stigma for BED when weight status is controlled in a sample of adult participants.

4.2 Desire for Social Distance does not Characterize BED Stigma

While stereotypes and prejudice emerged when the vignette character had BED, the results of the SDS indicated that the presence of BED did not lead participants to desire greater social distance from the character, suggesting that this form of discrimination may not characterize BED stigma. To explain this finding, it is necessary to understand why people may wish to distance themselves from a person with a mental illness. Within the mental health stigma literature, desire for social distance has been equated with perceived dangerousness (Horch & Hodgins, 2008; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999; Marie & Miles, 2008). Relating this to eating disorder stigma, studies have shown that BED is associated with less perceived dangerousness than other forms of disordered eating. For example, Simpson and Mazzeo (2017) found that a vignette character with BED was viewed as less dangerous than characters with ON and AN. Similarly, Ebneter and Latner (2013) found that a character with BED was perceived to be less impaired and less distrusted than characters with AN and BN, where items included, "I would not employ someone if I knew they had a problem like [name]" and "People with a problem like [name] are dangerous". For these reasons, the current findings

align with previous findings and suggest that desire for social distance does not represent a significant dimension of BED stigma. This is an important finding within the broader literature on mental health stigma because desire for social distance has been consistently associated with the stigmatization of other mental health disorders (e.g., Schizophrenia and Alcohol Use Disorder; Kasow & Weisskirch, 2010; Subramaniam et al., 2017). As such, the present results support the idea that different dimensions of stigma are more or less relevant for different mental health problems.

While it is possible that social distance does not characterize BED stigma, there are several additional variables that may have contributed to the lack of effects on the social distance scale in the current study. In a review of the literature on social distance within mental health stigma, Jorm and Oh (2009) described factors that may decrease participants' desire to socially distance themselves from a person with a mental health disorder. First, having personal experience with a mental health problem or having contact with others experiencing that mental health problem may decrease the desire people have to socially distance themselves from someone with that problem. This is an important consideration for the current study, where 22.5% of participants reported having personal experience with disordered eating, 26.3% reported having a family member with disordered eating, and 22.8% reported having experience working with individuals with eating disorders. Given that many participants in the sample had some form of exposure to disordered eating, they may have felt less desire to socially distance themselves from the vignette character when she had BED. Similarly, Jorm and Oh (2009) found that participants typically desire less social distance from females, and this relationship has also been found in more recent studies (e.g., Sowislo et al., 2017). For this reason, the fact that the

vignette character in the current study was female may have also contributed to participants' lack of desire to distance themselves from her in social settings.

4.3 Evidence for Weight Stigma is Limited

The second objective was to examine the nature of weight stigma (i.e., stereotyping, prejudice, and discrimination) when the target character was described as having healthy eating behaviours (i.e., when BED was controlled). In contrast to the hypothesis that weight stigma would emerge across different dimensions of stigma, participants did not anticipate having unpleasant emotional reactions around the character with obesity (i.e., prejudice was not present) nor did they desire greater social distance from her (i.e., discrimination was not present). These findings are surprising given that previous studies have found that weight stigma is partially characterized by unpleasant emotional reactions and desire for social distance. For example, one study found that students training for healthcare positions anticipated having less positive emotions (i.e., less supportive, less positive, more annoyed, feeling like they are wasting their time) around pregnant women with overweight or obesity compared to pregnant women with recommended weights (Mulherin, Miller, & Barlow, Deidrichs, & Thompson, 2013). In another study, participants were less likely to view a woman to be worthy of a managerial position when she had a large body compared to a thin body, where desire for social distance was positively associated with stigmatizing views regarding her leadership potential, starting salary, and overall employability.

In contrast to the results of the ARS and SDS, weight status did impact participants' responses on the CS, where they were more likely to stereotype the character when she was described as obese. However, this finding only emerged when BED was *not* present, indicating

that stereotypes associated with body size were not robust across different descriptions of the character's eating behaviour.

Overall, evidence to support the presentation of weight stigma in the current study is limited (i.e., no prejudice emerged, no discrimination emerged, and stereotyping was minimal). These findings contrast the broader weight stigma literature which have shown that people with larger bodies are often ignored, dismissed, and shamed in social situations (e.g., Gailey & Harjunen, 2019; Vartanian, Pinkus, & Smyth, 2014). One possible explanation for these unexpected results is that the presence of weight stigma depends on how a vignette character's eating behaviour is described. Just as descriptions of obesity have confounded the examination of BED stigma in prior research, studies on weight stigma often fail to control for descriptions of vignette characters' eating behaviours, which could impact the way a character is stigmatized for having a larger body.

4.4 Beliefs about Eating Behaviour may Drive Weight Stigma

In the current study, participants who were assigned to read one of two obesity vignettes read about a character with obesity and concurrent BED or about a character with obesity and healthy, balanced eating behaviours. This design is different from existing studies on weight stigma which often exclusively describe characters with obesity as having poor relationships with food. For example, in a vignette developed to describe a character with obesity, Ebneter and Latner (2013) included the statement, "[name] is constantly surrounded by fattening food. It is very hard to resist. She also tends to eat unhealthy foods under times of stress and when she is upset. This is when her diets tend to fail." Even though this vignette was intended to describe a character with obesity only, this description suggests that this character also has difficulty controlling her eating and does not have a healthy relationship with food. In that study, it is not

surprising that the character with 'obesity only' was stigmatized to a similar extent as another character with obesity and BED.

In contrast to the wording used in previous vignettes, the wording used in the current study allowed for the examination of weight stigma while eating behaviour was controlled. Here, it was found that BED stigma was prominent while weight stigma was not, suggesting that stigmatizing responses were primarily due to the fact that the vignette character engaged in binge eating rather than the fact that she had a larger body. This finding is further supported by other vignette studies on weight stigma that have manipulated vignette characters' eating behaviours. For example, Khan, Tarrant, Weston, Shah, and Farrow (2018) found that a male vignette character with obesity faced the greatest amount of prejudice for his body size when his weight was attributed to "eating too much food high in fat and sugar and not engaging in enough physical activity". In another study, Black, Sokol, and Vartanian (2014) found that a female vignette character with obesity was ascribed fewer stereotypes, evoked less disgust, and was perceived to have a more acceptable lifestyle when participants were told that she tried to eat healthily and exercise. In combination with the current findings, these findings suggest that 'weight stigma' may result from belief that people with obesity lack control over their eating, and not because of their actual size or appearance.

The possibility that beliefs about eating behaviour act as a driving force for weight stigma may also explain why previous vignette studies on eating disorder stigma have found mixed results when comparing BED vignettes to obesity vignettes (e.g., Ebneter & Latner, 2013). When characters in BED vignettes are described as having larger bodies and characters in obesity vignettes are described as having difficulties with their eating, it is impossible to discern whether participants' stigmatizing responses reflect stigma tied to eating behaviour or stigma tied to body

size. The fact that the character with obesity but no BED in the current study faced little stigma could be due to the fact that she was described as engaging in healthy and balanced eating behaviours, a feature that is not present in many of the obesity vignettes used in previous studies.

4.5 Concurrent BED and Obesity do not have an Additive Effect on Stigma

The third objective of the current study was to examine BED stigma when the target character was simultaneously described as obese (i.e., to examine the intersection of BED stigma and weight stigma). Consistent with intersectionality theories, it was hypothesized that the presence of concurrent BED and obesity would elicit the greatest degree of stigma. Overall, the results did not support this hypothesis.

In the current study, the results of the ARS and SDS did not reveal interactions between BED status and weight status. For both scales, there was no effect of weight status on stigma, and only the ARS revealed an effect of BED on stigma. Regarding the results of the CS, while a significant BED status/weight status interaction was present, the nature of the interaction did not reflect an additive effect of BED status and weight status on stigma. Instead, weight stigma was present for stereotyping only when the vignette character did *not* have BED. In other words, there were no differences in stereotyping across weight categories when the character did have BED. This outcome suggests that the character's weight status became inconsequential for stereotyping when BED was present.

The fact that there was no additive effect observed for BED stigma and weight stigma further reinforces the possibility that weight stigma itself is simply a product of how people view eating behaviours and has little to do with a person's body size. Here, BED emerged as a stigmatized condition regardless of body size, while limited support was found for stigma associated with having a larger body.

4.6 There is a Misconception that Individuals with BED have Larger Bodies

The fourth objective was to examine assumptions about body size when the vignette character was described as having BED and no mention of her weight was present in the vignette. It was hypothesized that participants would estimate the character's body size to be larger when she had BED compared to when she did not. As expected, participants were 36 times more likely to guess that the vignette character had a larger body when she had BED compared to when she did not have BED. This suggests that participants associate obesity with the act of binge eating. This finding is consistent with the results of a study by DePierre, Puhl, and Luedicke (2013) where participants had to report the weight status of character with 'food addiction' who was described as either obese or thin. In that study, participants were far more likely to make a weight classification error when the character was described as thin (i.e., they reported that he was obese anyway), indicating that they associated being obese with the term 'food addiction', even when they were told otherwise.

To examine assumptions about eating behaviour tied to the presence of obesity, an additional exploratory analysis revealed that estimates about the character's binge eating behaviour did *not* depend on her body size. Here, the presence of obesity did not lead participants to believe the character engaged in binge eating. Taken together, these findings further support the notion that eating behaviour has a greater influence on stigma than does body size.

4.7 Individuals with BED are not Blamed for their Condition

The fifth objective was to examine blame attributions imposed upon the vignette character for her condition when she had BED and/or obesity. First, it was found that weight status did not impact blame attributions when BED was present. That is, scores on the BAS were

comparable across vignettes that described the character as having BED in addition to no mention of weight, a recommended weight, or an obese weight. Second, it was found that participants blamed the character with obesity *less* when she had BED compared to when she did not have BED.

The fact that the character with BED and obesity was not blamed more than the characters with BED and no obesity (i.e., BED/NMW and BED/RW) suggests that participants did not believe the character should be blamed for her body size when she met criteria for a diagnosis of BED, perhaps *because* she met criteria for BED. This possibility is in line with previous research where people blame individuals with obesity less when they believe that obesity is caused by illness/biological factors rather than by personal choice (Hilbert, Rief, & Braehler, 2008; Pearl & Lebowitz, 2014). This reasoning could also explain why participants blamed the character less when she had obesity and BED compared to when she had obesity alone. If participants felt that having a diagnosis of BED meant that the character had no control over her body size, it would make sense for them to blame her less when BED was present. The finding that the character was blamed less for her condition when she had BED and obesity compared to obesity alone also replicates the findings of Ebneter and Latner (2013), who also used the BAS to examine blame imposed upon a female vignette character with obesity in the presence and absence of BED. However, Bannon and Colleagues (2009) found the opposite effect, where a character with BED and obesity was blamed more than a character with obesity alone. These mixed findings pertaining to blame attributions suggest that more research is required to disentangle the effect of BED on attributions of blame for obesity. It is also important to highlight that average scores for blame attributions across all three studies discussed here (i.e., the current study; Bannon et al., 2009; Ebneter & Latner, 2013) fell around the midpoint of the

blame scales used, with 'Neither agree or disagree' being the most commonly selected response. This suggests that, on average, participants may not blame characters with BED and/or obesity to a meaningful degree. This conclusion is surprising and could be explained by considering the format of the BAS and the associated implications for construct measurement.

In order to appropriately interpret the results of the BAS it is necessary to consider the formatting of the scale. Responses on numerical rating scales such as the BAS vary in terms of question wording, response wording, the number of response options, and the number of and placement of verbal anchors (Whitley & Kite, 2018). While the wording of the items on the BAS appear to have good face validity, the nature of some items on the scale are somewhat unconcealed in their assessment of blame (e.g., "Sarah is to blame for her current condition"). The use of the term 'blame' in some items may have led participants to feel less comfortable agreeing with the statements. In addition, all five of the BAS response options have a verbal anchor, and these anchors require that participants consciously acknowledge the extent to which they blame the character for her condition (1 = *Strongly agree*; 2 = *Agree*; 3 = *Neither agree or disagree*; 4 = *Disagree*; 5 = *Strongly disagree*). This response layout differs considerably from that of the ARS and CS, where participants are required to select one of seven points anchored between only three labels. For this reason, participants had less flexibility when selecting a response on the BAS and were required to consciously acknowledge if they chose to blame the character, which may have produced socially desirable responding. If participants had instead been given a visual analog scale for the BAS items, perhaps ranging from 0-100, it may have been easier for them to select a response that more accurately represented how they felt in terms of blaming the character. While this possibility is speculation, it is important to acknowledge that social desirability bias can be defined as both a personality trait (Grimm, 2010) and as a

component of scale validity (King & Bruner, 2000). While BIDR scores representing individual differences in social desirability bias did not correlate with responses on the BAS, it seems possible that the BAS scale itself could have elicited a general pattern of socially desirable responding across the sample, which could have led participants to blame the character less when she had BED.

4.8 Strengths and Limitations

4.8.1 Strengths

The current experimental study makes significant contributions to the existing literature on eating disorder stigma and weight stigma with several theoretical and methodological strengths. First, the vignette creation process adhered to best practice guidelines for vignette development to improve upon previous vignettes. This strengthened the internal validity of the BED status and weight status manipulations within the vignette descriptions. Specifically, this is the first study to examine BED stigma while controlling for body size and the first study to examine weight stigma while controlling for eating behaviour. Here, BED stigma was examined in the context of different weight descriptions and weight stigma was examined when eating pathology was both present and absent. In previous studies, BED vignettes nearly always describe characters as having a larger body (e.g., overweight, obese, severely obese), and obesity vignettes often describe characters as having a problematic relationship with food (e.g., loss of control eating, failed diets, excessive consumption of calorically dense foods). While it is true that having a larger body size often co-occurs with loss of control eating, muddling these descriptions in vignette studies reflects the very misconceptions that drive stigma in the first place: (1) the misconception that people with BED have larger bodies; and (2) the misconception that people with larger bodies cannot control their eating. In the current study, careful

manipulation of the vignette content allowed for BED status and weight status to be separated in order to examine the unique effects of BED and obesity on public stigma.

A second notable strength of the current study involves the use of non-specific stigma scales (i.e., scales that can assess stigma associated with any condition). Fox et al. (2018) recognized that measures to assess stigma are often developed for a particular disorder and are therefore not generalizable across studies of different mental health disorders (e.g., a measure may be designed to specifically assess the stigma of Schizophrenia). This approach to stigma measurement makes it difficult to compare findings across mental health disorders. This has led many eating disorder researchers to use *ad hoc* stigma questionnaires without proper psychometric validation (e.g., Ebneter, Latner, & O'Brien, 2011). However, van Brakel (2006) has argued that stigma dimensions are generally similar across different conditions and recommended that researchers adapt existing measures for use in research before developing condition-specific scales. In the current study, established measures designed to assess stigma in general were used, with slight adaptations to the SDS and CS while maintaining the core structure of the original scales. This approach to scale selection allowed for the assessment of the three main constructs comprising stigma associated with all mental health disorders (i.e., stereotypes, prejudice, and discrimination). The use of disorder non-specific stigma scales also allows for the comparison of findings across the broader stigma literature and facilitates the future replication of this study using different mental or physical health conditions.

4.8.2 Limitations

The current study also had a number of limitations that should be noted. One limitation is the use of a young Caucasian woman in the vignette descriptions. While the use of this character is consistent with the vast majority of vignette studies on eating disorders, it preserves the

misconception that individuals with disordered eating are invariably young, white, and female (O'Connor et al., 2019). Due to this feature, the results of this study may not be generalizable to individuals from other demographic subpopulations who face stigma associated with BED. Moving forward, researchers should examine the nature of BED stigma targeting individuals in other subpopulations, particularly those who are at an increased risk for developing disordered eating or who have greater difficulties accessing treatment. These groups include males (Cook, 2019; Gorrell & Murray, 2019), individuals with non-binary genders (Jones et al., 2018; Testa, Rider, Haug, & Balsam, 2017), and individuals in non-white racial and ethnic groups (Goode et al., 2020).

Another limitation of the current study was the use of primarily Caucasian and female participants. Given that people volunteered to complete this study, it was not possible to randomly select participants from the general population. This may limit the generalizability of the findings to other genders and racial backgrounds. Notably, one study found that females imposed less stigma upon a female vignette character than males (Bannon et al., 2009), so it may be the case that the results of the current study represent an attenuated depiction of public stigma associated with BED and obesity. For this reason, it is important that future studies recruit more diverse samples that are representative of the general population and also examine the role of participants' demographic characteristics in relation to stigmatizing responses.

Other methodological limitations of the current study are related to data collection. First, participants were recruited through social media webpages, making it impossible to obtain a random sample of adults. To address this concern, every effort was taken to recruit participants from webpages that consist of a wide range of demographic subgroups (e.g., 'Buy and Sell' pages). Secondly, the use of an online survey to collect information about stigma reduced the

ecological validity of this study, which is particularly important for drawing inferences about BED stigma in real world settings. The current study is the first experimental study to focus exclusively on BED stigma while controlling for weight status, representing a starting point for future studies in which the results of this study can be applied to generate theoretically-based hypotheses which can be tested using alternative methods of data collection (e.g., qualitative interviewing).

4.9 Future Directions

There are a number of future directions that can be taken based on the results of the current study. First and foremost, understanding how individuals experience stigma to improve their quality of life is an ultimate goal for stigma research, but it is difficult to infer this information without obtaining information directly from people with BED. While the present results provide insight on public attitudes toward BED, the results do not inform on the subjective experience of BED stigma (O'Connor et al., 2019) nor do they account for individual characteristics that may influence how people with BED perceive, experience, and cope with stigmatizing encounters (Himmelstein, Puhl, & Quinn, 2017; Pescosolido et al., 2008). For this reason, future studies should seek to understand how individuals with BED experience stigma associated with their eating disorder and also explore individual traits and tendencies that influence subjective experiences of BED stigma. These directions might be explored using qualitative methodologies such as open-ended surveys, interviews, and focus group discussions. To date, it appears that only one qualitative study on BED stigma exists (Evans, 2016).

Another critical future direction pertains to additional vignette studies designed to examine intersectionality and BED stigma. When developing vignettes, it is important to maintain consistent character details aside from the information that represents the independent

variables. This is because an independent variable manipulated in a vignette is only valid when all other character details are controlled. Furthermore, for each independent variable manipulated in a vignette study, there must be an equal number of vignettes that control for that variable (e.g., BED versus no BED, large body versus thin body). For this reason, vignette studies are limited in the number of character attributes that can be altered across conditions. Understanding the role of intersecting traits is an important and emerging topic of interest in eating disorder stigma research (O'Connor et al., 2019). While the current study was designed to examine BED within the context of weight stigma, using vignette studies to explore other marginalized traits that may intersect with BED stigma is an important research endeavour. As mentioned previously, it is important that future studies examine how BED stigma impacts different subpopulations of people, such as individuals who already face stigma for other reasons (e.g., individuals in the lesbian, gay, bisexual, transgender, and questioning community; Arcelus, Fernádndez-Aranda, & Bouman, 2018; Bell, Rieger, & Hirsch, 2019).

4.10 Implications for Clinical and Public Policy Settings

Stigma associated with BED and/or body size carries important social and clinical implications for individuals in these target populations. Previous studies show that eating disorder stigma and weight stigma are associated with lack of social support, low help-seeking behaviours, worse eating disorder symptomology, and delayed treatment services (Ali et al., 2017; Becker, Arrindell, Perloe, & Striegel-Moore, 2010; Griffiths, Mitchison, Murray, Mond, & Bastian, 2018; Griffiths, Mond, Murray, Thornton, & Touyz, 2015; Griffiths, Mond, Murray, & Touyz, 2015; Papadopoulos & Brennan, 2015; Vartanian & Porter, 2016; Wu & Berry, 2018). For example, an individual may not feel able to seek professional help if they do not have encouragement from family or friends, and even those who do seek professional help run the risk

of facing stereotypes and prejudice in treatment settings (Ali et al., 2017; Becker et al., 2010). Moreover, while eating disorder stigma is associated with worse symptomology and longer symptom duration (Griffiths, et al., 2018; Griffiths et al., 2015), these outcomes may be particularly problematic for individuals with BED and/or larger bodies given that the vast majority of individuals with BED do not obtain appropriate treatment and individuals with larger bodies are less likely to receive an appropriate eating disorder diagnosis (Kessler et al., 2013; Sonneville & Lipson, 2018). Given the consequences of stigma for individuals with BED and/or larger bodies, it is necessary for research to highlight ways in which stigma can be targeted in social programming and policy change to improve wellbeing and access to treatment for targeted individuals.

4.10.1 Approaches for Stigma Reduction

One important consideration for stigma reduction relates to the way the media portrays information about eating and appearance. Through the FINIS model, Pescosolido and colleagues (2008) discuss how stigmatizing messages presented in media sources can contribute to the generalized devaluation of a marginalized attribute. This is particularly relevant for BED stigma and weight stigma given the pervasiveness of diet culture in print, radio, television, and Internet media. Across these forums, there is a pervasive message that restricted or 'clean' eating is desirable while permissive or uncontrolled eating is undesirable. Likewise, individuals are consistently pressured to be thin and fit while having a larger body is consistently equated with having poor health. This culture of shame in social media is evidenced by the Instagram privacy and safety policy, which includes a subsection dedicated solely to information on eating disorders and support resources (see https://help.instagram.com/477434105621119). For individuals with BED and larger bodies, stigma in the media means that they are often faced with

the message that they lack self-control and are unhealthy. These messages are false and harmful, because many people who fall above the recommended weight range maintain healthy eating and exercise behaviours, and BMI is not a reliable indicator of health (Nuttall, 2015).

Social media campaigns and television advertising may be useful mediums to counter these messages by promoting eating disorder literacy (i.e., knowledge and understanding of causes, symptoms, and treatments) as well as body neutrality (i.e., accepting and normalizing all body types). In recent years, clothing companies have begun to introduce media campaigns to support body neutrality such as American Eagle's AerieREAL Campaign and Nike's Instagram campaign for women. Moreover, companies such as Facebook have recently taken the initiative to ban advertisements that perpetuate diet culture (e.g., 'before-and-after' photos) and restrict weight loss advertisements to users older than 18 years of age (see Facebook's policies here https://www.facebook.com/policies/ads). Continued efforts such as these to counter diet culture and appearance stigma may help to develop a culture of inclusion among individuals who currently face high levels of exposure to stigma through the media. Furthermore, promoting increased knowledge about the etiology and severity of BED and obesity among members of the general public may help reduce stigmatizing content shared on the Internet.

5.0 Conclusions

Individuals with BED have expressed feeling blamed and shamed for their binge eating behaviour (Evans, 2016), but research on public stereotypes, prejudice, and discrimination against individuals with BED has been limited and lacking methodological rigor. Understanding the nature and magnitude of public stigma for BED is crucial for the development of social programming to target stereotypes and prejudice that prevent individuals with BED from accessing treatment for their eating disorder. Furthermore, understanding how different

marginalized attributes interact to influence attitudes toward people with disordered eating is an important step to understanding eating disorder stigma through an intersectional lens. The results of the current study demonstrate the gravity of stigmatizing beliefs associated with BED, where individuals with BED face negative stereotypes and less positive emotional reactions from members of the public, regardless of their weight status. Moreover, the results of the current study help to disentangle mixed findings on BED stigma (e.g., Bannon et al., 2009; Cain et al., 2017; Ebneter & Latner, 2013) by demonstrating that BED is indeed a highly stigmatized condition.

The vast majority of people with binge eating problems do not obtain appropriate treatment (as many as 90%; Kessler et al., 2013; Sonneville & Lipson, 2018), individuals with binge eating difficulties are half as likely to seek help than those with other forms of disordered eating (Forrest, Smith, & Swanson, 2017), and individuals with larger bodies are least likely to have their eating problem identified by a professional (Sonnevillle & Lipson, 2018). Expanding research on BED stigma by exploring intersectional stigma associated with multiple marginalized attributes can help direct social and policy change by determining specific factors that increase stereotyping and prejudice toward individuals with BED. Understanding the unique roles that eating behaviours and body size have on stigma can help direct new approaches to decrease stigma and improve the wellbeing of individuals with eating disorders and marginalized bodies alike.

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Table 1

Vignette Studies on Binge Eating and Binge Eating Disorder Stigma

Authors	Participants	Vignettes	Outcome Measures	Relevant Findings	Vignette Details
Bannon, Hunter-Reel, Wilson, & Karlin (2009)	Undergraduate psychology students aged 18+ in the United States (N = 374)	(1) Woman with obesity and BED symptomology; (2) Woman with obesity and no BED symptomology	• Patient Attitudes Questionnaire (beliefs about treatment and prognosis) • Anti-fat Attitudes Test (disparagement, attraction, and blame) • Universal Measure of Bias of Fat (negative judgment, social distancing, attraction, and equal rights) • Anti-fat Attitudes Scale (dislike, fear of fat, and willpower)	• BED with obesity associated with greater blame, increased social distancing, and less attraction than obesity alone • Compared to women, men viewed the character with BED and obesity as less worthy of having equal rights	• Vignettes unavailable • Diagnostic labels not included
Ebneter, Latner, & O'Brien (2011)	Undergraduate psychology students in the United States (N = 427)	(1) 19-year old woman with AN; (2) 19-year old woman with BN; (3) 19-year old woman with BED and obesity; (4) 19-year old woman with obesity, no BED	• Ad hoc stigma questionnaire (blame, attention seeking, and fear of character) • The Just World Scale (beliefs about fairness in the world) • Ad hoc causal attributions questionnaire (beliefs about the causes of BED)	• Stigma scores associated with beliefs that the world is fair and just (i.e., people get what they deserve) • For the BED with obesity condition, stigma scores associated with lack of self-discipline beliefs and parenting as a causal attribution	• Vignettes unavailable • Descriptions based on DSM-IV criteria
Ebneter & Latner (2013)	Undergraduate psychology students in the United States	(1) 19-year old woman with AN; (2) 19-year old woman with BN; (3) 19-year old woman with BED	• Universal Stigma Scale (blame/personal responsibility and impairment/distrust)	• Participants more likely to blame the character with BED and obesity than characters with AN, BN, or Depression,	• Descriptions based on DSM-IV criteria

Authors	Participants	Vignettes	Outcome Measures	Relevant Findings	Vignette Details
	(*N* = 427)	and obesity; (4) 19-year old woman with obesity, no BED; (5) 19-year old woman with major depressive disorder	*impairment/distrust includes questions relevant to fear and social distancing • Single item to assess lack of self-discipline	but less likely to blame the character with BED and obesity compared to obesity alone • BED with obesity associated with less impairment/distrust than AN or BN, but more impairment/distrust than obesity alone • BED with obesity and obesity alone were perceived to result from a lack of self-discipline more than AN, BN, and Depression	• Diagnostic labels not included
Stokes (2015)	Clinical psychology doctoral students in the United States (*N* = 112)	(1) 25-year old woman with AN; (2) 25-year old woman with BN; (3) 25-year old woman with BED and obesity; (4) 25-year old woman with obesity, no BED; (5) 25-year old woman with a recommended weight and no eating pathology	• Characteristics Scale (personality traits ascribed to the character) • Eating Disorder Stigma Scale (blameworthiness, ability to communicate, perceived recoverability, beliefs about attention-seeking, fear of character)	• Participants more likely to blame the character with BED and obesity than characters with AN or BN • Greater stigma associated with obesity alone compared to BED and obesity • Participants with greater disordered eating pathology exhibited less stigma toward BED	• Diagnostic labels included • Descriptions based on DSM-IV criteria • Extraneous details varied across vignettes (e.g., occupation)
Anderson, Gratwick-Sarll, Bentley, Harrison, and Mond (2016)	Adolescents aged 12-18 in Australia (*N* = 1666)	(1) 15-year old female with BED symptomology and overweight; (2) 15-year old female with BN symptomology and recommended weight	• MHL questions modelled from previous work (ability to recognize the problem, perceived severity of the problem)	• BED with obesity was attributed to a 'lack of will power/self-control' more than BN • BED with obesity was perceived to be less severe than BN	• Diagnostic labels not included • Different names used across the vignettes

Authors	Participants	Vignettes	Outcome Measures	Relevant Findings	Vignette Details
Star, Hay, Quirk, & Mond (2015)	Community sample aged 35-63 in Australia (*N* = 1030)	(1) 28-year old female with AN symptomology and underweight; (2) 26-year old male with an atypical eating disorder and recommended weight; (3) 32-year old female with BED symptomology and obesity	• Single item to examine perceived discrimination toward the character • Single item to determine if perceived discrimination was primarily based on eating behaviour or weight (BED vignette only)	• Participants' perceived discrimination was highest for BED with obesity (66%), followed by AN (48%), and BN (35%) • Of those who believed the character with BED would face discrimination, 84% believed that this would be primarily due to her body size	• Diagnostic labels not included • Different names used across the vignettes • Extraneous details varied across vignettes (e.g., occupation)
O'Connor, McNamara, O'Hara, & McNicholas (2016)	Adolescents aged 15-19 in Ireland (*N* = 319)	(1) 15-year old gender-neutral person with AN; (2) 15-year old gender-neutral person with BN; (3) 15-year old gender-neutral person with BED and obesity; (4) 15-year old gender-neutral person with Depression; (5) 15-year old gender-neutral person with Type 1 Diabetes	• Illness Perceptions Questionnaire (beliefs about illness duration, personal control, and treatment efficacy) • Affective Reactions Scale (participants' anticipated emptions upon interacting with the character) • Characteristics Scale (perceptions about the character's personality) • Mental health literacy questions (ability to recognize, perceived causes of the problem)	• Participants' were more likely to attribute BED to 'self-control problems' (40.6%) compared to AN (1.9%) and BN (4.2%) • The character with BED was rated as having significantly more control over their disorder than characters with Depression or Type 1 Diabetes • Participants anticipated emotions did not differ across eating disorder subtypes • All characters with disordered eating were rated as having less positive and more negative personality traits than the character with Type 1 Diabetes • The character with BED was ascribed less positive personality traits than characters with AN or Depression	• Vignettes unavailable
Murakami, Essayli, & Latner (2016)	Undergraduate psychology	(1) 21-year old female with AN; (2) 21-year old male with AN; (3) 21-year old	• Universal Measure of Bias (negative judgement,	• Characters with AN or BN were viewed as less attractive than those with BED or obesity	• Diagnostic labels included

Authors	Participants	Vignettes	Outcome Measures	Relevant Findings	Vignette Details
	students in the United States (N = 318)	female with BN; (4) 21-year old male with BN; (5) 21-year old female with BED; (6) 21-year old male with BED; (7) 21-year old female with obesity, no BED; (8) 21-year old male with obesity, no BED	social distancing, attraction, equal rights) • Universal Stigma Scale (blame/personal responsibility and impairment/distrust)	and more impaired than those with BED • Negative judgements and desire for social distance were greater for BN than BED • Stigma scores did not differ with character gender	• Descriptions based on DSM-5 criteria • Weight not stated in BN or BED vignettes, stated in AN and obesity vignettes
McNicholas, O' Connor, O'Hara, & McNamara (2016)	Psychiatrists, general practitioners, psychologists, and counsellors in Ireland (N = 171)	(1) 15-year old gender-neutral person with AN; (2) 15-year old gender-neutral person with BN; (3) 15-year old gender-neutral person with BED and obesity; (4) 15-year old gender-neutral person with Depression; (5) 15-year old gender-neutral person with Type 1 Diabetes	• Stigma questions (perceptions of personal controllability and beliefs about reactions to interacting with the character) • Mental health literacy questions (ability to recognize the problem, beliefs about duration, perceived helpfulness of treatment, and beliefs about long-term outcomes)	• Perceptions about personal controllability did not differ across the five vignettes • Professionals were no more likely to guess that the character with BED was female than male	• Diagnostic labels not included • Reviewed by a multi-disciplinary expert panel
Simpson & Mazzeo (2017)	Undergraduate psychology students in the United States (N = 505)	(1) 19-year old female with AN; (2) 19-year old female with BN; (3) 19-year old female with ON; (4) 19-year old female with BED and overweight	• Six items from the Opinions Scale (self-attribution, personal responsibility, and fear/exclusion) • Three items to assess perceived severity • Five items to assess perceived causes • Characteristics Scale (personality traits ascribed to the character)	• AN and ON associated with being harder talk to and being more dangerous than BED with overweight • AN associated with seeking attention more than BED with overweight • BED associated with greater personal responsibility than ON • Biological causes associated with AN and ON more than BED with overweight	• Diagnostic labels included • Descriptions based on DSM-5 criteria for AN, BN, and BED and proposed criteria for ON • Explicit use of the word 'binge' present in the BED vignette

Authors	Participants	Vignettes	Outcome Measures	Relevant Findings	Vignette Details
				• Self-discipline associated with AN and BN more than BED with overweight • All eating disorder subtypes were attributed negative personality traits • Men stigmatized the characters more than women	
Cain, Buck, Fuller-Tyszkiewicz, & Krug (2017)	Healthcare professionals in Australia, (primarily general practitioners, dieticians, and medical students) (N = 175)	(1) 19-year old woman with BED and obesity; (2) 19-year old woman with obesity, no BED	• Fat Phobia scale, short form (weight bias assessed by describing the character using pairs of opposites; e.g., 'no will power' versus 'has will power') • Mental health literacy questions (knowledge of diagnostic criteria, physical complications, and treatment options for BED/obesity)	• Participants less likely to endorse weight bias when the vignette character had concurrent BED and obesity compared to obesity alone	• Diagnostic labels not included • Descriptions based on DSM-5 criteria • Different names used across the vignettes

Note. Studies that included binge eating vignettes but did not examine stigma are excluded from this summary. These studies include Mond and Hay (2008), Currin, Schmidt, and Waller (2007), and Currin, Waller, and Schmidt, (2009). In all three excluded studies, vignette characters with binge eating were described as obese.

Table 2

Means and Standard Deviations for Scores on the CS, ARS, SDS, BAS, and BIDR Subscales by Condition

	Condition	CS	ARS	SDS	BAS[a]	SDE	IM
Mean (SD)	BED/OB	4.236 (0.468)	3.390 (0.976)	2.389 (0.577)	1.986 (0.752)	4.310 (3.090)	6.000 (3.557)
	BED/RW	4.126 (0.441)	3.204 (0.816)	2.516 (0.432)	2.048 (0.723)	4.315 (2.919)	6.333 (3.034)
	BED/NMW	4.265 (0.553)	3.203 (0.885)	2.536 (0.481)	1.897 (0.715)	3.818 (2.674)	7.018 (3.704)
	NBED/OB	3.778 (0.674)	3.054 (0.928)	2.529 (0.489)	2.665 (0.726)	4.649 (3.287)	7.241 (3.757)
	NBED/RW	3.349 (1.047)	2.955 (1.027)	2.438 (0.558)		5.220 (2.894)	6.512 (3.421)
	NBED/NMW	3.217 (0.902)	2.793 (1.019)	2.486 (0.566)		4.958 (3.229)	6.625 (3.431)

[a]Statistics were not calculated for control vignettes due to the nature of items on this scale.

Table 3

Correlations Between Stigma Scale Scores, BIDR Subscale Scores, Gender, BMI, Eating Disorder Diagnosis, and Experience Working with Individuals with Eating Disorders

	1	2	3	4	5	6	7	8	9	10
1. Characteristics Scale	–	0.397***	-0.240***	0.045	-0.171**	-0.073	-0.059	-0.011	-0.053	0.066
2. Affective Reactions Scale		–	-0.263***	0.174**	-0.144*	-0.054	-0.095	0.025	-0.069	-0.114*
3. Scale Social Distance Scale			–	-0.292***	0.041	0.067	0.145*	-0.011	0.031	0.069
4. Blame Attribution Subscale				–	0.110	0.027	-0.255***	-0.007	-0.160*	-0.057
5. Self-Deceptive Enhancement					–	0.467***	-0.161**	-0.012	-0.118	-0.018
6. Impression Management						–	0.034	-0.082	-0.066	-0.009
7. Gender[a]							–	-0.006	0.144*	0.098
8. Body Mass Index								–	-0.121	-0.073
9. Eating Disorder Diagnosis[b]									–	0.161**
10. Experience[c]										–

Note. Experience = experience working with individuals with eating disorders.

[a]Females were coded as 1.

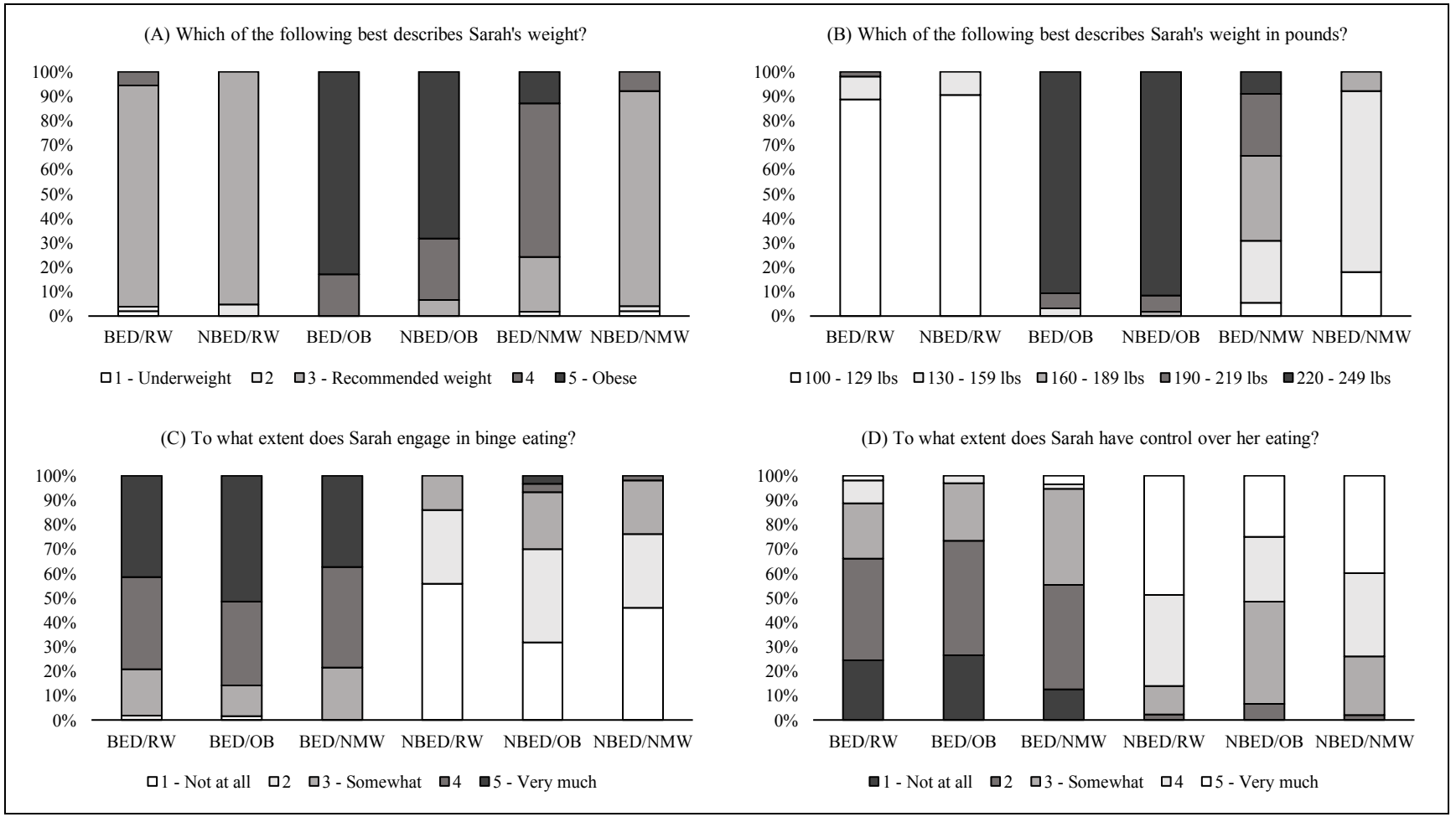
[b]Individuals who have been diagnosed with an ED were coded as 1.

[c]Individuals who have experience working with people with eating disorders were coded as 1.

*$p < .05$, **$p < .01$, ***$p < .001$.

Figure 1

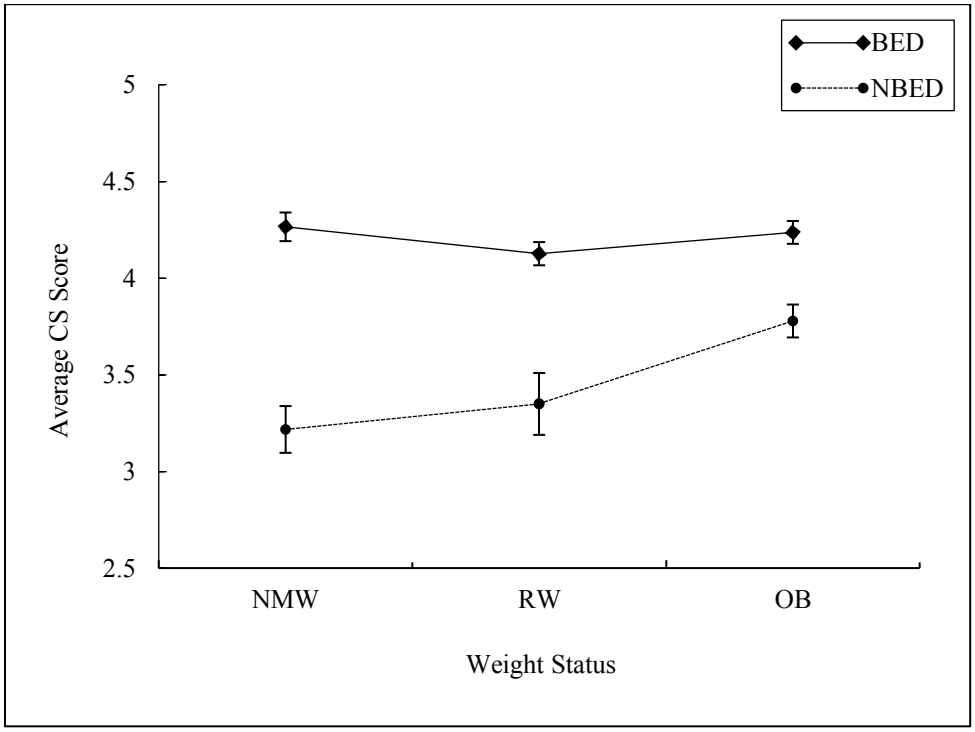
Responses to the Four Manipulation Check Questions Across Vignette Conditions



Note. Checks for the weight status manipulation are depicted in A and B and checks for the BED status manipulation are depicted in C and D. The percentage of participants who selected each response option is depicted in the bars. BED = binge eating present; NBED = no binge eating present; OB = obese weight; RW = recommended weight; NMW = no mention of weight.

Figure 2

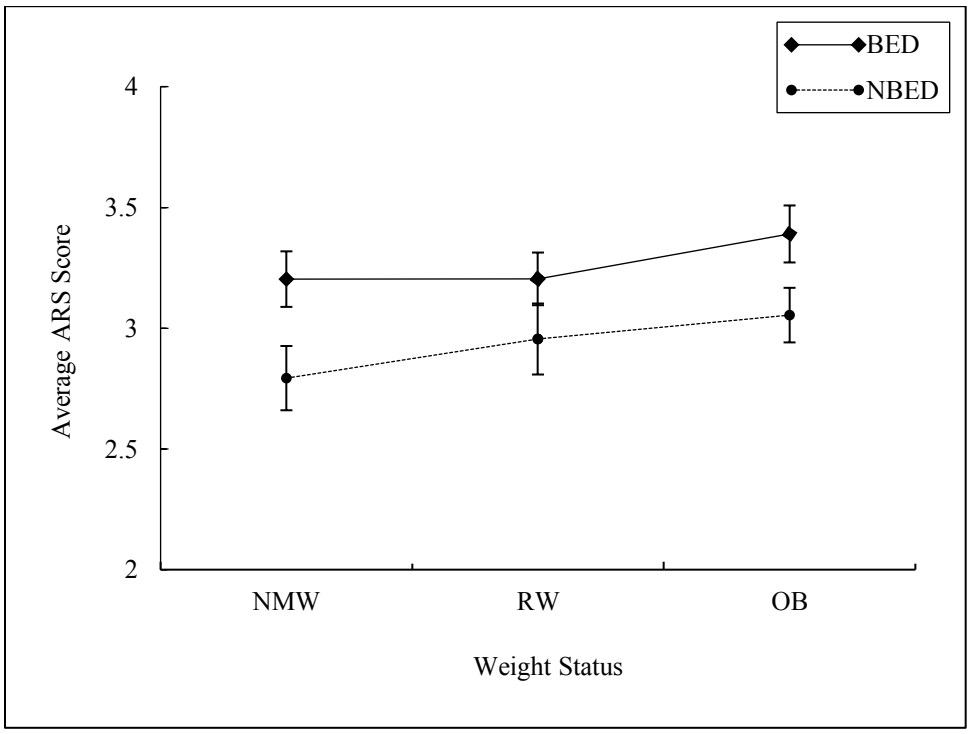
Characteristics Scale Means Across Vignette Conditions



Note. Higher scores on the CS represent less positive/more negative personality traits ascribed to the vignette character. Scores above the midpoint (4) represent negative personality traits and scores below the midpoint represent positive personality traits. Bars represent standard errors of the means.

Figure 3

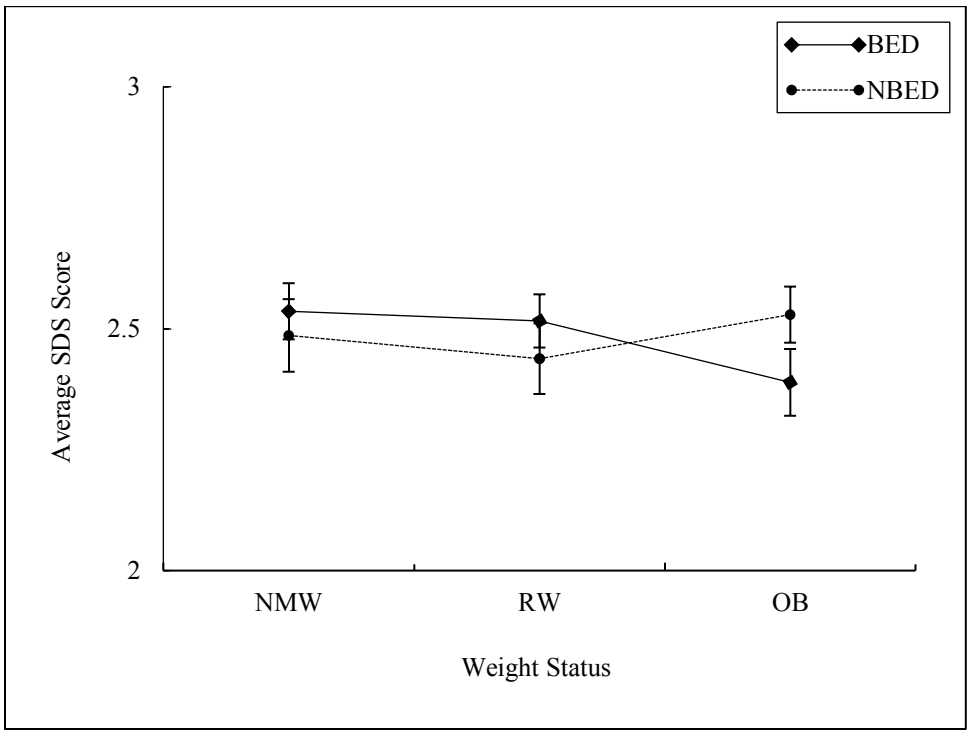
Affective Reactions Scale Means Across Vignette Conditions



Note. Higher scores on the ARS represent less positive/more negative anticipated emotional reactions among participants. Scores above the midpoint (4) represent negative emotional reactions and scores below the midpoint represent positive emotional reactions. Bars represent standard errors of the means.

Figure 4

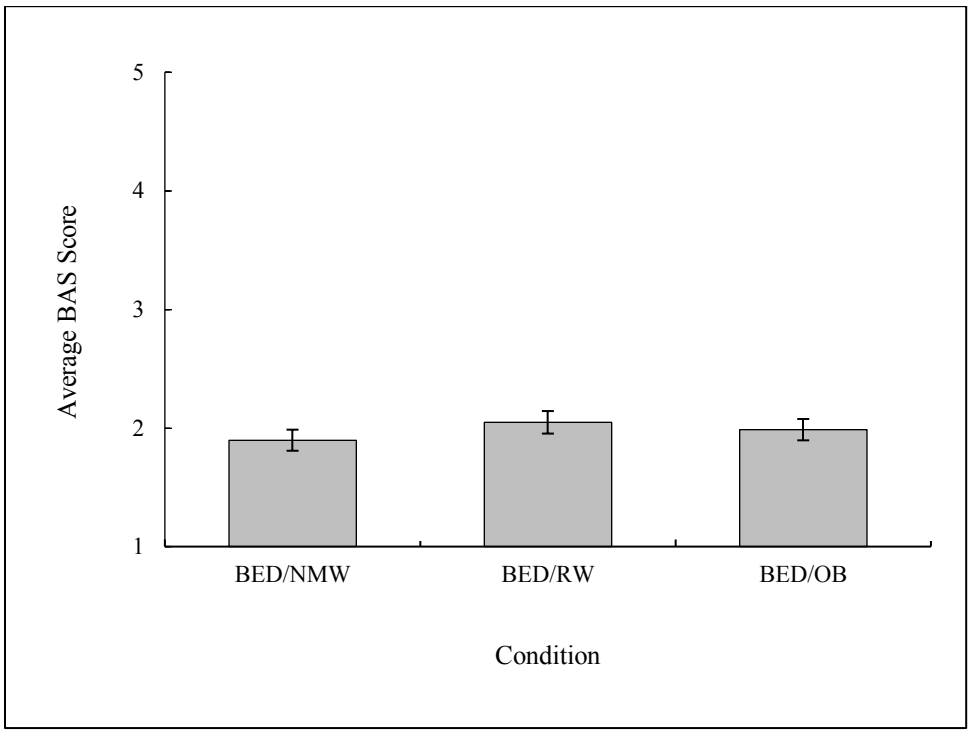
Social Distance Scale Means Across Vignette Conditions



Note. Higher scores on the SDS represent greater desired social distance from the vignette character. Bars represent standard errors of the means.

Figure 5

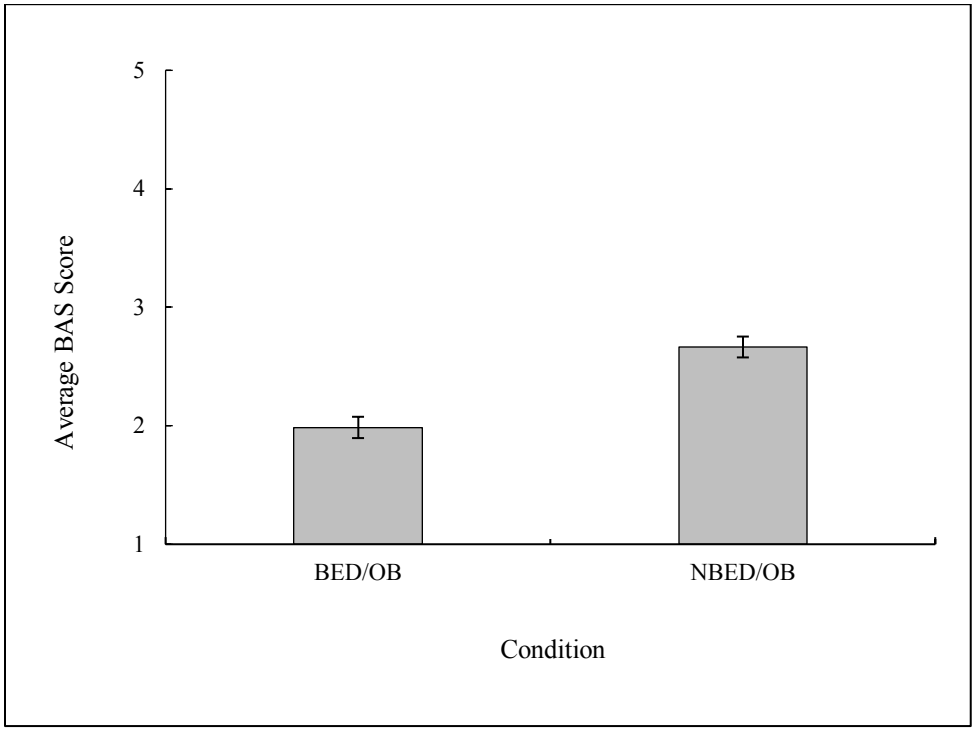
Blame Attribution Scale Means Across BED Vignette Conditions



Note. Higher scores on the BAS represent more blame imposed upon the vignette character. Bars represent standard errors of the means.

Figure 6

Blame Attribution Scale Means Across Obese Vignette Conditions



Note. Higher scores on the BAS represent more blame imposed upon the vignette character. Bars represent standard errors of the means.

Appendix A: Vignette Creation Procedure

The vignettes were created with reference to best practice recommendations for constructing vignettes in experimental research (Aguinis & Bradley, 2014; Huges & Huby, 2004). The goal in creating these vignettes was to maximize internal validity while maintaining experimental realism (i.e., maximize the quality and saliency of the manipulation as well as the perceived realness of the character). First, a basic character description was established. To decrease the extent to which the character appeared hypothetical, the character was described as an undergraduate attending Memorial University of Newfoundland. This information was selected for two reasons: (1) the character being from the same geographic population as the participants increases the perception that she could be a real person that they know; and (2) describing the character as a student at the local university is a fairly neutral description, given that many people in this province attend this university. This was an improvement upon previous studies, which have described characters using specific details that may elicit bias, such as that she is a secretary working at a solicitor's office or a second-year art student (Ebneter & Latner, 2013; Star et al., 2015).

After the background description was established, the BED component of the vignettes was developed. To begin this process, BED vignettes used in previous studies on eating disorder stigma were reviewed and compared (e.g., Ebneter & Latner, 2013; Mond & Hay, 2008; Murakami et al., 2016; Simpson & Mazzeo, 2017; Stokes, 2015). Phrases in these vignettes were evaluated for their relevancy for describing BED. Phrases were retained if they were considered to be representative of BED symptomology. Additionally, details considered to be distracting or inaccurate were not retained. For example, some vignettes described symptoms that could preclude a clinical diagnosis of BED (e.g., engaging in food restriction; Simpson & Mazzeo, 2015), while other vignettes included details that could distract participants from the intended manipulation (e.g., stating that the character despises her body; Mond & Hay, 2008; Ebneter & Latner, 2013; Stokes, 2015). As with many previous vignettes, BED was described using diagnostic criteria outlined in the DSM-5 (APA, 2013). Specifically, the character was described as experiencing a loss of control over her eating, eating in the absence of physical hunger, eating beyond the point of physical discomfort, experiencing disgust and guilt following a binge eating episode, and not engaging in any compensatory behaviours to counteract a binge episode. As with previous BED vignettes, a description of a binge eating episode was also included in the vignette. Here, foods used to describe the binge episode were modified from previous studies to correspond with foods commonly consumed among individuals with BED Newfoundland, Canada. These foods were identified from client experiences reported in clinical practice and included cookies, ice cream, and chips (J. Carter, personal communication, 2020).

After the BED component of the vignettes was created, the weight component was developed. Obesity was described using the World Health Organization (2018) cut-off BMI of 30 or higher. Given that BMI is a crude unit of measurement of body fat percentage, a high BMI value was used to increase the likelihood that participants would imagine the character as having a high body fat percentage (as opposed to a high muscle mass, for example). For the obesity and recommended weight vignettes, BMI values of 41.8 and 21.6 were selected based on a visual examination of images developed by Moussally, Rochat, Posaa, and Van der Linden (2017).

Lastly, the control vignette content was developed by replacing the description of binge eating with a description of healthy eating behaviours and by removing the weight descriptor.

Once all six vignettes were drafted, the content was vetted by a social psychologist and two clinical psychologists (one who specializes in eating disorders).

Appendix B: Vignettes

Binge Eating Disorder/No Mention of Weight

Sarah is a 19-year-old university student at MUN. Sarah's overall diet is generally regular, with three meals a day that consist of a wide variety of foods. When she gets home from school, she usually has a snack. However, sometimes she finds that she is unable to stop eating after having the snack and continues to eat a large amount of food even though she is not hungry. For example, she may eat a peanut butter and jelly sandwich, a pack of cookies, two bowls of ice cream, and some chips all in one sitting. Later in the evening, Sarah eats supper and will sometimes lose control again and eat the leftovers that she was planning to save for the next day. During these times Sarah feels out of control of her eating and often continues to eat until she feels uncomfortably full. After these episodes of eating Sarah experiences feelings of disgust and guilt. Sarah feels very distressed by these episodes, but she has never tried to compensate for what she has eaten (e.g., by fasting, vomiting, or using laxatives). According to clinical diagnostic criteria, Sarah qualifies for a diagnosis of Binge Eating Disorder.

Binge Eating Disorder/Recommended Weight

Sarah is a 19-year-old university student at MUN. Sarah's overall diet is generally regular, with three meals a day that consist of a wide variety of foods. When she gets home from school, she usually has a snack. However, sometimes she finds that she is unable to stop eating after having the snack and continues to eat a large amount of food even though she is not hungry. For example, she may eat a peanut butter and jelly sandwich, a pack of cookies, two bowls of ice cream, and some chips all in one sitting. Later in the evening, Sarah eats supper and will sometimes lose control again and eat the leftovers that she was planning to save for the next day. During these times Sarah feels out of control of her eating and often continues to eat until she feels uncomfortably full. After these episodes of eating Sarah experiences feelings of disgust and guilt. Sarah feels very distressed by these episodes, but she has never tried to compensate for what she has eaten (e.g., by fasting, vomiting, or using laxatives). Sarah is about 5 feet 4 inches tall and weighs 126 pounds. Her Body Mass Index (BMI) of 21.6 means that she falls within the recommended weight range for her age and height. According to clinical diagnostic criteria, Sarah qualifies for a diagnosis of Binge Eating Disorder.

Binge Eating Disorder/Obese

Sarah is a 19-year-old university student at MUN. Sarah's overall diet is generally regular, with three meals a day that consist of a wide variety of foods. When she gets home from school, she usually has a snack. However, sometimes she finds that she is unable to stop eating after having the snack and continues to eat a large amount of food even though she is not hungry. For example, she may eat a peanut butter and jelly sandwich, a pack of cookies, two bowls of ice cream, and some chips all in one sitting. Later in the evening, Sarah eats supper and will sometimes lose control again and eat the leftovers that she was planning to save for the next day. During these times Sarah feels out of control of her eating and often continues to eat until she feels uncomfortably full. After these episodes of eating Sarah experiences feelings of disgust and guilt. Sarah feels very distressed by these episodes, but she has never tried to compensate for

what she has eaten (e.g., by fasting, vomiting, or using laxatives). Sarah is 5 feet 4 inches tall and weighs 243 pounds. Her Body Mass Index (BMI) of 41.8 categorizes her as obese. According to clinical diagnostic criteria, Sarah qualifies for a diagnosis of Binge Eating Disorder.

No Binge Eating Disorder/No Mention of Weight

Sarah is a 19-year-old university student at MUN. Sarah's overall diet is generally regular, with three meals a day that consist of a wide variety of foods. When she gets home from school, she usually has a snack. Later in the evening, Sarah eats supper and will usually save the leftovers for the next day. She knows to stop eating before she feels uncomfortably full and she feels like she has control over her eating. Sometimes she enjoys eating foods that are high in calories such as chocolate and cheesecake. Sarah does not have any psychiatric or physical illnesses.

No Binge Eating Disorder/Recommended Weight

Sarah is a 19-year-old university student at MUN. Sarah's overall diet is generally regular, with three meals a day that consist of a wide variety of foods. When she gets home from school, she usually has a snack. Later in the evening, Sarah eats supper and will usually save the leftovers for the next day. She knows to stop eating before she feels uncomfortably full and she feels like she has control over her eating. Sometimes she enjoys eating foods that are high in calories such as chocolate and cheesecake. Sarah is about 5 feet 4 inches tall and weighs 126 pounds. Her Body Mass Index (BMI) of 21.6 means that she falls within the recommended weight range for her age and height. Sarah does not have any psychiatric or physical illnesses.

No Binge Eating Disorder/Obese

Sarah is a 19-year-old university student at MUN. Sarah's overall diet is generally regular, with three meals a day that consist of a wide variety of foods. When she gets home from school, she usually has a snack. Later in the evening, Sarah eats supper and will usually save the leftovers for the next day. She knows to stop eating before she feels uncomfortably full and she feels like she has control over her eating. Sometimes she enjoys eating foods that are high in calories such as chocolate and cheesecake. Sarah is 5 feet 4 inches tall and weighs 243 pounds. Her Body Mass Index (BMI) of 41.8 categorizes her as obese. Sarah does not have any psychiatric or physical illnesses.

Appendix C: Characteristics Scale

Based on your impression of Sarah, rate her on the following characteristics:

				Neutral			
	1	2	3	4	5	6	7	
Strong	O	O	O	O	O	O	O	Weak
Insensitive	O	O	O	O	O	O	O	Sensitive
Sophisticated	O	O	O	O	O	O	O	Naive
Bold	O	O	O	O	O	O	O	Shy
Sociable	O	O	O	O	O	O	O	Unsociable
Emotional	O	O	O	O	O	O	O	Rational
Cruel	O	O	O	O	O	O	O	Kind
Poised	O	O	O	O	O	O	O	Awkward
Unintelligent	O	O	O	O	O	O	O	Intelligent
Sad	O	O	O	O	O	O	O	Happy
Unsuccessful	O	O	O	O	O	O	O	Successful
Enthusiastic	O	O	O	O	O	O	O	Unenthusiastic
Insecure	O	O	O	O	O	O	O	Secure
Open	O	O	O	O	O	O	O	Defensive
Cold	O	O	O	O	O	O	O	Warm
Untrustworthy	O	O	O	O	O	O	O	Trustworthy
Interesting	O	O	O	O	O	O	O	Boring
Effective	O	O	O	O	O	O	O	Ineffective
Lazy	O	O	O	O	O	O	O	Energetic
Disciplined	O	O	O	O	O	O	O	Careless

Appendix D: Affective Reactions Scale

If you were to interact with Sarah, indicate how you would feel for each of the following pairs of emotions:

				Neutral			
	1	2	3	4	5	6	7	
Pessimistic	O	O	O	O	O	O	O	Optimistic
Tranquil	O	O	O	O	O	O	O	Anxious
Supportive	O	O	O	O	O	O	O	Resentful
Fearful	O	O	O	O	O	O	O	Confident
Empathic	O	O	O	O	O	O	O	Angry
Disgusted	O	O	O	O	O	O	O	Sympathetic
Apprehensive	O	O	O	O	O	O	O	Comfortable
Irritable	O	O	O	O	O	O	O	Patient
Relaxed	O	O	O	O	O	O	O	Tense
Calm	O	O	O	O	O	O	O	Nervous

Appendix E: Social Distance Scale

Based on your impression of Sarah, rate how willing you would feel for each of the following:

1. How would you feel about renting a room in your home to someone like Sarah?
    - ○ Definitely unwilling
    - ○ Probably unwilling
    - ○ Probably willing
    - ○ Definitely willing

2. How would you feel about having someone like Sarah as a neighbor?
    - ○ Definitely unwilling
    - ○ Probably unwilling
    - ○ Probably willing
    - ○ Definitely willing

3. How would you feel about being coworkers or classmates with someone like Sarah?
    - ○ Definitely unwilling
    - ○ Probably unwilling
    - ○ Probably willing
    - ○ Definitely willing

4. How would you feel about having someone like Sarah take care of your home for a couple of days?
    - ○ Definitely unwilling
    - ○ Probably unwilling
    - ○ Probably willing
    - ○ Definitely willing

5. How would you feel about having a close family member of yours marry someone like Sarah?
    - ○ Definitely unwilling
    - ○ Probably unwilling
    - ○ Probably willing
    - ○ Definitely willing

6. How would you feel about introducing someone like Sarah to your friend group?
    - ○ Definitely unwilling
    - ○ Probably unwilling
    - ○ Probably willing
    - ○ Definitely willing

7. How would you feel about recommending someone like Sarah to a job working for a friend of yours?
    - ○ Definitely unwilling
    - ○ Probably unwilling
    - ○ Probably willing
    - ○ Definitely willing

Appendix F: Blame Attribution Scale

Based on your impression of Sarah, indicate the degree that you agree or disagree with each of the following statements:

1. Sarah is to blame for her current condition.
   - O 1 - Strongly disagree
   - O 2 - Disagree
   - O 3 - Neither agree or disagree
   - O 4 - Agree
   - O 5 - Strongly agree
   - O Not applicable

2. People in Sarah's current condition could snap out of it if they wanted to.
   - O 1 - Strongly disagree
   - O 2 - Disagree
   - O 3 - Neither agree or disagree
   - O 4 - Agree
   - O 5 - Strongly agree
   - O Not applicable

3. Being like Sarah is a sign of personal weakness.
   - O 1 - Strongly disagree
   - O 2 - Disagree
   - O 3 - Neither agree or disagree
   - O 4 - Agree
   - O 5 - Strongly agree
   - O Not applicable

4. Sarah could pull herself together if she wanted to.
   - O 1 - Strongly disagree
   - O 2 - Disagree
   - O 3 - Neither agree or disagree
   - O 4 - Agree
   - O 5 - Strongly agree
   - O Not applicable

5. Sarah's problem is **not** a real medical illness.
   - O 1 - Strongly disagree
   - O 2 - Disagree
   - O 3 - Neither agree or disagree
   - O 4 - Agree
   - O 5 - Strongly agree
   - O Not applicable

Appendix G: Balanced Inventory of Desirable Responding

Please indicate how much you agree with each of the following statements as they pertain to you personally.

1. My first impressions of people usually turn out to be right.
   - ○ 1 - Not true
   - ○ 2
   - ○ 3
   - ○ 4 - Somewhat true
   - ○ 5
   - ○ 6
   - ○ 7 - Very true

2. It would be hard for me to break any of my bad habits.
   - ○ 1 - Not true
   - ○ 2
   - ○ 3
   - ○ 4 - Somewhat true
   - ○ 5
   - ○ 6
   - ○ 7 - Very true

3. I don't care to know what other people really think of me.
   - ○ 1 - Not true
   - ○ 2
   - ○ 3
   - ○ 4 - Somewhat true
   - ○ 5
   - ○ 6
   - ○ 7 - Very true

4. I have **not** always been honest with myself.
   - ○ 1 - Not true
   - ○ 2
   - ○ 3
   - ○ 4 - Somewhat true
   - ○ 5
   - ○ 6
   - ○ 7 - Very true

5. I always know why I like things.
   - 1 - Not true
   - 2
   - 3
   - 4 - Somewhat true
   - 5
   - 6
   - 7 - Very true

6. When my emotions are aroused, it biases my thinking.
   - 1 - Not true
   - 2
   - 3
   - 4 - Somewhat true
   - 5
   - 6
   - 7 - Very true

7. Once I've made up my mind, other people can seldom change my opinion.
   - 1 - Not true
   - 2
   - 3
   - 4 - Somewhat true
   - 5
   - 6
   - 7 - Very true

8. I am **not** a safe driver when I exceed the speed limit.
   - 1 - Not true
   - 2
   - 3
   - 4 - Somewhat true
   - 5
   - 6
   - 7 - Very true

9. I am fully in control of my own fate.
   - 1 - Not true
   - 2
   - 3
   - 4 - Somewhat true
   - 5
   - 6
   - 7 - Very true

10. It's hard for me to shut off a disturbing thought.
    - 1 - Not true
    - 2
    - 3
    - 4 - Somewhat true
    - 5
    - 6
    - 7 - Very true

11. I **never** regret my decisions.
    - 1 - Not true
    - 2
    - 3
    - 4 - Somewhat true
    - 5
    - 6
    - 7 - Very true

12. I sometimes lose out on things because I can't make up my mind soon enough.
    - 1 - Not true
    - 2
    - 3
    - 4 - Somewhat true
    - 5
    - 6
    - 7 - Very true

13. The reason I vote is because my vote can make a difference.
    - 1 - Not true
    - 2
    - 3
    - 4 - Somewhat true
    - 5
    - 6
    - 7 - Very true

14. My parents were **not** always fair when they punished me.
    - 1 - Not true
    - 2
    - 3
    - 4 - Somewhat true
    - 5
    - 6
    - 7 - Very true

15. I am a completely rational person.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

16. I rarely appreciate criticism.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

17. I am very confident of my judgements.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

18. I have sometimes doubted my ability as a lover.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

19. It's all right with me if some people happen to dislike me.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

20. I don't always know the reasons why I do the things I do.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

21. I sometimes tell lies if I have to.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

22. I **never** cover up my mistakes.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

23. There have been occasions when I have taken advantage of someone.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

24. I **never** swear.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

25. I sometimes try to get even rather than forgive and forget.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

26. I always obey laws, even if I'm unlikely to get caught.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

27. I have said something bad about a friend behind his or her back.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

28. When I hear people talking privately, I avoid listening.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

29. I have received too much change from a salesperson without telling him or her.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

30. I always declare everything at customs.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

31. When I was young, I sometimes stole things.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

32. I have **never** dropped litter on the street.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

33. I sometimes drive faster than the speed limit.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

34. I **never** read sexy books or magazines.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

35. I have done things that I don't tell other people about.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

36. I **never** take things that don't belong to me.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

37. I have taken sick leave from work or school even though I wasn't really sick.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

38. I have **never** damaged a library book or store merchandise without reporting it.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

39. I have some pretty awful habits.
- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

40. I don't gossip about other people's business.

- 1 - Not true
- 2
- 3
- 4 - Somewhat true
- 5
- 6
- 7 - Very true

Appendix H: Manipulation Check Questions

Based on the information you read in the passage...

1. Which of the following best describes Sarah's weight?
   - ○ 1 - Underweight
   - ○ 2
   - ○ 3 - Recommended weight
   - ○ 4
   - ○ 5 - Obese

2. Which of the following best describes Sarah's weight in pounds (lbs)?
   - ○ 100 - 129 lbs
   - ○ 130 - 159 lbs
   - ○ 160 - 189 lbs
   - ○ 190 - 219 lbs
   - ○ 220 - 249 lbs

3. To what extent does Sarah engage in binge eating?
   - ○ 1 - Not at all
   - ○ 2
   - ○ 3 - Somewhat
   - ○ 4
   - ○ 5 - Very much

4. To what extent does Sarah have control over her eating?
   - ○ 1 - Not at all
   - ○ 2
   - ○ 3 - Somewhat
   - ○ 4
   - ○ 5 - Very much

Appendix I: Demographic Questionnaire

Please answer the following questions as accurately as possible. Your responses are completely anonymous and confidential. No identifying information (e.g., your name, email address, etc.) will be linked to any of the information you provide. You may skip any questions you do not wish to answer.

1. Age What is your age? (years): _____

2. Gender With which gender do you best identify?
   - Male
   - Female
   - Transgender
   - Prefer not to say
   - Other (you may specify if you wish): ____

3. How would you describe your relationship status?
   - Single
   - In a relationship
   - Married or common law
   - Divorced
   - Widowed
   - Separated

4. Please select your height (feet, inches) from the drop-down menu:

5. What is your weight in pounds? (lbs): ____

6. What is your ethnic background?
   - Caucasian/White
   - African-American/Black
   - Hispanic/Latino
   - Asian
   - Indigenous (First Nations, Inuit, or Métis)
   - Middle Eastern
   - East Indian
   - Other (please specify): ____

7. What is the highest level of education you have completed to date?
   - No formal schooling completed
   - Some primary/elementary schooling completed
   - Some high school, no diploma
   - High school diploma or equivalent
   - Some undergraduate training, no degree
   - Bachelor's degree completed
   - Some graduate training (master's or doctorate)

- Master's degree completed
- Doctorate degree completed
- Professional degree completed
- Trade/technical/vocational training completed

8. Are you currently a student?
    - Yes, I am a full-time student (enrolled in three or more courses)
    - Yes, I am a part-time student (enrolled in one or two courses)
    - No, I am not currently a student

9. Are you currently employed?
    - Currently hold full-time employment
    - Currently hold part-time employment
    - Unable to work
    - Retired
    - Not employed
    - Homemaker or caregiver (not employed for pay)

10. Which value best describes your total household income last year?
    - Less than $50,000
    - $50,000 - $99,999
    - $100,000 - $149,999
    - $150,000 - $199,999
    - $200,000 or more

11. Have you ever been diagnosed with an eating disorder by a healthcare professional?
    - Yes
    - No
    - I have never been formally diagnosed, but I believe I have an eating disorder

12. Are you aware of an immediate family member who has been diagnosed with an eating disorder by a healthcare professional?
    - Yes
    - No
    - I am not aware of an immediate family member having been formally diagnosed, but I believe one of my immediate family members has an eating disorder

13. Do you have experience working with individuals with eating disorders?
    - Yes
    - No

Appendix J: Ethical Approval Letter

MEMORIAL UNIVERSITY

Interdisciplinary Committee on Ethics in Human Research (ICEHR)

St. John's, NL Canada A1C 5S7
Tel: 709 864-2561 icehr@mun.ca
www.mun.ca/research/ethics/humans/icehr

ICEHR Number:	**20192935-SC**
Approval Period:	April 17, 2019 – April 30, 2020
Funding Source:	Not Funded
Responsible Faculty:	Dr. Jacqueline Carter-Major Department of Psychology
Title of Project:	*Perceptions of Binge Eating Disorder*

April 17, 2019

Ms. Kayla Hollett
Department of Psychology, Faculty of Science
Memorial University of Newfoundland

Dear Ms. Hollett:

Thank you for your correspondence of April 15, 2019 addressing the issues raised by the Interdisciplinary Committee on Ethics in Human Research (ICEHR) concerning the above-named research project. ICEHR has re-examined the proposal with the justifications and revisions submitted, and is appreciative of the thoroughness and clarity with which you have responded to the concerns raised by the Committee. In accordance with the *Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans (TCPS2)*, the project has been granted *full ethics clearance* to April 30, 2020. ICEHR approval applies to the ethical acceptability of the research, as per Article 6.3 of the *TCPS2*. Researchers are responsible for adherence to any other relevant University policies and/or funded or non-funded agreements that may be associated with the project.

The *TCPS2* **requires** that you submit an Annual Update to ICEHR before April 30, 2020. If you plan to continue the project, you need to request renewal of your ethics clearance and include a brief summary on the progress of your research. When the project no longer involves contact with human participants, is completed and/or terminated, you are required to provide an annual update with a brief final summary and your file will be closed. If you need to make changes during the project which may raise ethical concerns, you must submit an Amendment Request with a description of these changes for the Committee's consideration prior to implementation. If funding is obtained subsequent to approval, you must submit a Funding and/or Partner Change Request to ICEHR before this clearance can be linked to your award.

All post-approval event forms noted above can be submitted from your Researcher Portal account by clicking the *Applications: Post-Review* link on your Portal homepage. We wish you success with your research.

Yours sincerely,

Kelly Blidook, Ph.D.
Vice-Chair, Interdisciplinary Committee on Ethics in Human Research

KB/lw

cc: Supervisor – Dr. Jacqueline Carter-Major, Department of Psychology, Faculty of Science

Appendix K: Informed Consent Form

Purpose of study:
Understanding how people view one another has implications for how people treat one another. An important question within social psychology pertains to how people view other people based on their behaviour. The purpose of our research is to explore opinions about a female character after being provided with information about her eating behaviour.

What you will do in this study:
This is a two-part study. In Part 1, you will be presented with a paragraph describing a young woman named Sarah followed by a questionnaire. Following this, some participants will proceed to Part 2 of the study. If you do proceed, you will be presented with a new paragraph describing a different young woman named Jane followed by another short questionnaire. You will also complete a demographic questionnaire.

Length of time:
The length of time required to complete this study will range from 15-25 minutes, depending on if you complete Part 1 only or if you complete both Parts 1 and 2. Part 1 will take approximately 15 minutes, and Part 2 will take approximately 10 minutes.

Compensation:
If you wish, you may provide your e-mail address to enter yourself into a draw for one of two $50 gift cards. Please note that to maintain anonymity in the study, your e-mail address will be recorded separately from any information you submitted with the survey.

Withdrawal from the study:
There are no consequences for withdrawing from the study. You may withdraw from the study at any time by clicking the EXIT button on the screen, up until the time you submit your final response. If you choose to withdraw from the study after beginning the survey, you may still enter your e-mail address for a chance to win one of two gift cards. If you choose to do so, any information you have entered up until the point of withdrawal will be deleted from the online system. Please note that it will not be possible to withdraw your responses from the study after you submit the full-length survey because all data will be anonymized (i.e., there is no way to link your identity to your responses).

Possible benefits:
By participating in this research, you may gain insight into the research process. As a participant you will also contribute valuable information to the scientific community. In the future, the general public will also gain knowledge from the results of our research.

Possible risks:
During your participation in this study it is possible that you may become concerned about your own eating behaviour. Throughout the study, you may skip any questions that you do not wish to answer. If you would like to speak further about the information in this survey you may contact Dr. Jacqueline Carter-Major at jacqueline.carter@mun.ca. If you have concerns about your mental wellbeing you may also receive support by contacting the MUN Student Wellness and

Counselling Center at 709-864-8500 or by calling the provincial Mental Health Helpline at 709-737-4668.

Confidentiality and anonymity:
There is a difference between confidentiality and anonymity. Confidentiality is ensuring that identifying information and any personal information obtained is accessible only to those authorized to have access. Anonymity is a result of not disclosing participant's identifying characteristics (such as name or description of physical appearance).

Confidentiality:
All data that you provide will remain confidential. Only the researchers will have access to any and all data. As well, the researchers will have no way of knowing who, or who did not, complete this survey. No identifying information is requested through the survey. If you choose to enter your e-mail address into the gift card draw your e-mail will be stored separately and will be in no way linked to your submitted responses.

Anonymity:
Every reasonable effort will be made to ensure participant anonymity. In the current study, no identifying information will be included on the survey itself and results of this research will be presented or published in aggregate form only. E-mail addresses provided for the gift card draw will be kept separate from survey responses. No identifying information will be included in any publications of this research.

Use, access, ownership, and storage of data:
All data will be stored on a password-protected computer in encrypted folders. The researchers Kayla Hollett, Jenna Pennell, and Dr. Jacqueline Carter-Major, will be the only individuals with access to the data. Anonymized data will be kept for a minimum of five years as required by Memorial University policy on Integrity of Scholarly Research. Following this five-year period all data will be completely destroyed.

Third-party data collection and/or storage:
Data collected from you as part of your participation in this project will be hosted by the online survey platform, Qualtrics. All data stored by Qualtrics is subject to their privacy policy and to any relevant laws of the country in which their servers are located. Therefore, anonymity and confidentiality of data may not be guaranteed in the rare instance, for example, that government agencies obtain a court order compelling the provider to grant access to specific data stored on their servers. If you have questions or concerns about how your data will be collected or stored, please contact the researcher and/or visit the provider's website for more information before participating.

The Qualtrics privacy statement can be found at:

https://www.qualtrics.com/privacy-statement/

The Qualtrics security statement can be found at:

https://www.qualtrics.com/security-statement/

Reporting and sharing results with participants:
The data collected from this survey will be utilized for a master's thesis and an undergraduate honours thesis. These works will be available at Memorial University's Queen Elizabeth II Library and may be accessed online at http://collections.mun.ca/cdm/search/collection/theses. These works may also be presented and published in peer-reviewed forums. Any published information will include a summary of all information obtained from all participants and will not include any individual responses or identifying information.

Questions:
You are welcome to ask questions at any time before, during, or after your participation in this research. If you would like more information about this study, please contact Kayla Hollett or Dr. Jacqueline Carter-Major.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at (709) 864-2861.

Consent:
By submitting the survey to the researchers this means that:

- You have read the information about the research.
- You have been able to ask questions about this study, if so desired.
- You are satisfied with the answers to all your questions.
- You understand what the study is about and what you will be doing.
- You understand that you are free to withdraw participation from the study by closing your browser window or navigating away from this page at any time, up until you submit the survey to the researchers, without having to give a reason, and that doing so will not affect you now or in the future.
- You understand that this data is being collected anonymously and therefore your data cannot be removed once you submit this survey.

By consenting to this online survey, you do not give up your legal rights and you do not release the researchers from their professional responsibilities.

You may wish to print a copy of this informed consent form for your records.

Clicking the button below constitutes consent and implies your agreement to the above statements. Please click the NEXT button below to proceed to the survey.

Appendix L: Debriefing Form

Title: Exploring Opinions About Eating Behaviour

Researchers: Kayla Hollett, Department of Psychology, Memorial University of Newfoundland, kbh878@mun.ca; Jenna Pennell, Department of Psychology, Memorial University of Newfoundland, jmpennell@mun.ca

Supervisor: Dr. Jacqueline Carter-Major, Associate Professor, Department of Psychology, Memorial University of Newfoundland, jacqueline.carter@mun.ca

Thank you for participating in the study! Your participation and the data that you contribute are valuable for our research. This feedback sheet is intended to explain to you the purpose and hypotheses of the study in which you have just participated.

The purpose of our study was to explore the stigma surrounding binge eating disorder and obesity, as well as to explore participants' knowledge and understanding of binge eating disorder. We did not disclose in the title, invitation, or consent form that this study was investigating knowledge and opinions about binge eating disorder in order to avoid bias in the study responses and results.

In the first part of the study, you read one of four descriptions of a girl named Sarah and then completed a questionnaire using the information from the description. This questionnaire included questions to assess participants' desired social distance from Sarah (the Social Distance Scale), emotional reactions that might occur upon interacting with Sarah (the Affective Reactions Scale), opinions about Sarah's character (the Characteristics Scale), and blame imposed upon Sarah (the Blame Attribution subscale of the Universal Stigma Scale). We also assessed participant response patterns (the Balanced Inventory of Desirable Responding) and asked demographic questions. We asked participants to indicate their height and weight as an imperfect estimate of body mass index, which may correlate with some patterns of weight stigma.

In some of the descriptions Sarah had binge eating disorder and in other descriptions she did not. Some participants then moved on to the second part of the study. If you completed the second part of the study, you read a new description of a girl named Jane who had binge eating disorder, and then completed a questionnaire about your knowledge of Jane's problem.
Clarifying the attributes that underlie attitudes towards binge eating disorder is crucial to understanding the impact of social stigma on health behaviours among individuals with this disorder. Relatedly, understanding public knowledge of binge eating disorder may help elucidate the factors that contribute to stigma. The current research will help expand what is known about public knowledge and perceptions of binge eating disorder, a serious mental health concern. During your participation in this study, it is possible that you may have become concerned about your own eating behaviors. If you have concerns about your mental wellbeing you may also receive support by contacting the MUN Student Wellness and Counselling Center at 709-864-8500 or by calling the provincial Mental Health Helpline at 709-737-4668. If you would like information on referrals to mental health services, you may contact Eastern Health Adult Central

Intake at 709-752-8888. At this time, we would like to remind you that you may still withdraw as a participant in this study. If you choose to withdraw now, you will still be compensated for your participation.

As a way to thank you for your participation in the current study, we invite you to enter an e-mail address for a chance to win one of two $50 gift cards. Your e-mail address will not be associated with your survey responses. To enter the draw, please click the following link: https://mun.az1.qualtrics.com/jfe/form/SV_0HeJdXJ38Gjwy3j

Appendix M: Supplemental Analyses

SDS with gender as a covariate:
No main effect of BED status, F (1, 294) = 0.000, p = .995, η^2 = 0.000
No main effect of weight status, F (2, 294) = 0.019, p = .982, η^2 = 0.000
Significant effect of gender, F (1, 294) = 5.840, p = 0.016, η^2 = 0.019
No significant interaction, F (2, 294) = 0.475, p = 0.622, η^2 = 0.003

CS with SDE as a covariate:
Main effect of BED status, F (1, 293) = 89.704, p < .001, η^2 = 0.220
Main effect of weight status, F (2, 293) = 5.686, p = .004, η^2 = 0.028
Significant effect of SDE, F (1, 293) = 3.904, p = .049, η^2 = 0.010
Significant interaction, F (2, 293) = 4.707, p = .010, η^2 = 0.023

ARS with SDE and experience with eating disorders as covariates:
Main effect of BED status, F (1, 291) = 9.388, p = .002, η^2 = 0.030
No main effect of weight status, F (2, 291) = 1.223, p = .296, η^2 = 0.008
Significant effect of SDE, F (1, 291) = 4.510, p = .035, η^2 = 0.014
Significant effect of experience, F (1, 291) = 4.208, p = .041, η^2 = 0.013
No significant interaction, F (2, 291) = 0.208, p = .812, η^2 = 0.001

BAS with gender and eating disorder diagnosis as covariates:
No significant effect of weight status, F (1, 124) = 0.360, p = .699, η^2 = 0.005
Significant effect of gender, F (1, 124) = 18.091, p < .001, η^2 = 0.123
Significant effect of eating disorder diagnosis, F (1, 124) = 4.263, p = .041, η^2 = 0.029

Note: this test was conducted using weight status as the independent variable to compare the three conditions that describe the character as having BED (i.e., BED/OB versus BED/RW versus BED/NMW).

BAS with gender and eating disorder diagnosis as covariates:
Significant effect of BED status, F (1, 92) = 21.921, p < .001, η^2 = 0.173
Significant effect of gender, F (1, 92) = 12.309, p < .001, η^2 = 0.097
No significant effect of eating disorder diagnosis, F (1, 92) = 0.654, p = 0.421, η^2 = 0.005

Note: this test was conducted using BED status as the independent variable to compare the two conditions that describe the character as having obesity (i.e., BED/OB versus NBED/OB)